

NPS ARCHIVE  
1998.03  
VAN VEEN, D.



DUDLEY KNOX LIBRARY  
NAVAL POSTGRADUATE SCHOOL  
MONTEREY CA 93943-5101





# NAVAL POSTGRADUATE SCHOOL

## Monterey, California



## THESIS

**BARGAINING TACTICS AND STRATEGY  
IN A GOVERNMENT/CONTRACTOR  
BILATERAL MONOPOLY**

by

Dennis Gerard Van Veen

March 1998

Thesis Advisor:

David V. Lamm

**Approved for public release; distribution is unlimited.**

DUDLEY KNOX LIBRARY  
NAVAL POSTGRADUATE SCHOOL  
MONTEREY CA 93943-5101

# REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE March 1998	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. BARGAINING TACTICS AND STRATEGY IN A GOVERNMENT/ CONTRACTOR BILATERAL MONOPOLY			5. FUNDING NUMBERS	
6. AUTHOR(S) Dennis Gerard Van Veen				
7. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Postgraduate School Monterey CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE	
<p>13. ABSTRACT (maximum 200 words)</p> <p>The purpose of this research is to examine potential bargaining strategies and tactics which might be used to respond to an offer perceived as unfair or unreasonable from a sole source offeror. Initially, a sole source offeror normally has considerable bargaining leverage over the Government. Pricing data needed to properly evaluate the seller's quotation may be incomplete, inaccurate or unavailable. Urgent and compelling need may require accelerating the procurement process.</p> <p>Using bargaining theory and the classic economic paradigm of bilateral monopoly as a foundation for the research, potential bargaining strategies and tactics were evaluated through a survey of 62 Department of Defense contracting specialists.</p> <p>A primary conclusion of the research is that attaining a bargaining agreement that reflects a fair and reasonable price under bilateral monopoly conditions is not possible unless the Government possesses adequate information to accurately assess the fairness and reasonableness of the offered price.</p>				
14. SUBJECT TERMS bargaining theory, bargaining, negotiations, strategy, tactics, bilateral monopoly, sole source contracts, purchasing			15. NUMBER OF PAGES 172	
			16. PRICE CODE	
17. SECURITY CLASSIFI- CATION OF REPORT Unclassified	18. SECURITY CLASSIFI- CATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFI- CATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL	





Approved for public release; distribution is unlimited.

**BARGAINING TACTICS AND STRATEGY IN A  
GOVERNMENT/CONTRACTOR BILATERAL MONOPOLY**

Dennis Gerard Van Veen  
Lieutenant, United States Navy  
B.S., University of Florida, 1985

Submitted in partial fulfillment  
of the requirements for the degree of

**MASTER OF SCIENCE IN MANAGEMENT**

from the

**NAVAL POSTGRADUATE SCHOOL**

**March 1998**

— / \



## ABSTRACT

DUDLEY KNOX LIBRARY  
NAVAL POSTGRADUATE SCHOOL  
MONTEREY CA 93943-5101

The purpose of this research is to examine potential bargaining strategies and tactics which might be used to respond to an offer perceived as unfair or unreasonable from a sole source offeror. Initially, a sole source offeror normally has considerable bargaining leverage over the Government. Pricing data needed to properly evaluate the seller's quotation may be incomplete, inaccurate or unavailable. Urgent and compelling need may require accelerating the procurement process.

Using bargaining theory and the classic economic paradigm of bilateral monopoly as a foundation for the research, potential bargaining strategies and tactics were evaluated through a survey of 62 Department of Defense contracting specialists.

A primary conclusion of the research is that attaining a bargaining agreement that reflects a fair and reasonable price under bilateral monopoly conditions is not possible unless the Government possesses adequate information to accurately assess the fairness and reasonableness of the offered price.





## TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	GENERAL ISSUE.....	1
B.	BACKGROUND.....	2
C.	SPECIFIC PROBLEM.....	4
D.	RESEARCH QUESTIONS AND OBJECTIVES.....	8
E.	SCOPE, LIMITATIONS AND ASSUMPTIONS.....	10
F.	METHODOLOGY.....	11
G.	THESIS ORGANIZATION.....	12
II.	LITERATURE REVIEW AND THEORETICAL FRAMEWORK.....	15
A.	GENERAL.....	15
B.	PRICING APPROACHES.....	16
C.	FAIR AND REASONABLE PRICE.....	19
D.	BARGAINING THEORY AND BILATERAL MONOPOLY.....	23
E.	SUMMARY.....	41
III.	BARGAINING TACTICS.....	45
A.	GENERAL.....	45
B.	BARGAINING TACTICS AND STRATEGY.....	47
C.	A MODEL APPROACH TO BARGAINING POWER.....	54
D.	SUMMARY.....	62
IV.	SURVEY RESULTS.....	65
A.	GENERAL.....	65
B.	DEMOGRAPHIC INFORMATION.....	65
C.	SURVEY QUESTIONS.....	70
D.	BARGAINING PREFERENCES.....	80
E.	SUMMARY.....	82
V.	ANALYSIS.....	87
A.	GENERAL.....	87
B.	THE MODEL AND THE CONSTELLATION SCENARIO.....	88
C.	BARGAINING THEORY AND THE CONSTELLATION SCENARIO.....	94
D.	ANALYSIS OF THE PRINCIPAL SURVEY QUESTIONS.....	96
E.	ANALYSIS OF BARGAINING APPROACHES.....	119
F.	SUMMARY.....	121
VI.	CONCLUSIONS AND RECOMMENDATIONS.....	125
A.	INTRODUCTION.....	125
B.	CONCLUSIONS.....	125
C.	RECOMMENDATIONS.....	127
D.	ANSWERS TO RESEARCH QUESTIONS.....	128

E. SUGGESTIONS FOR FURTHER RESEARCH.....	131
APPENDIX: THESIS SURVEY (WITH COVER LETTER).....	133
LIST OF REFERENCES.....	151
BIBLIOGRAPHY.....	155
INITIAL DISTRIBUTION LIST.....	161







## I. INTRODUCTION

### A. GENERAL ISSUE

A central tenet of Government contracting is the concept of "fair and reasonable" price [Ref. 1:p. I-25]. A fair and reasonable price must be certified by Government buyers regardless of the dollar value of the contract, contract type or method, or urgency of need. A Government buyer's primary objective is a "total result and price fair and reasonable to both the Government and the contractor." [Ref. 2:par. 15.803(c)]

Attainment of a fair and reasonable, or efficient price is implied when the price reflects the economic forces of a competitive market [Ref. 1:pp. I-29-I-30]. Not all markets however, are characterized by the condition of many buyers and sellers that leads to efficient pricing under competitive market conditions. A market state may more closely reflect a monopolistic or oligopolistic condition where it might not be appropriate to infer that a price is efficient [Ref. 3:pp. 371-408]. Major defense contracts for weapon systems for example, are normally constricted by a market that consists of only a few defense contractors, competing in a market where there is one principal buyer, the United States Government.

The central question posed by this thesis asks the question of what bargaining approaches a buyer should



consider when:

a. lack of market forces or competitive pricing for the product to be procured renders traditional price analysis methods ineffective, or

b. other conditions lead to an offered price which is perceived to be unfair or unreasonable and,

c. information needed to ascertain price reasonableness (e.g., cost or pricing data) is inaccurate, incomplete or unavailable, and,

d. the item is urgently needed, and

e. there is only one known source of supply.

It is theorized that different bargaining approaches and strategy may be applied to this type of procurement dilemma in order to gain information related to the seller's pricing motives, work to negate the inherent advantages a sole source seller normally has over a Government buyer, influence the seller to modify his initial bargaining position, and ultimately, lead toward the attainment of a fair and reasonable price.

## **B. BACKGROUND**

The primary goal of this study is to evaluate bargaining approaches which may be used by Government buyers to ensure an optimal, or a fair and reasonable price, when a market condition precludes easy determination of such price.

The Federal Acquisition Regulation requires the price of all goods and services procured to be "fair and

reasonable" [Ref. 2: par. 15.803]. This rule holds regardless of the dollar amount of the procurement, the contract type, procurement method, number of sellers, national security interests or urgency of need. Assessing whether a price is fair and reasonable, or "price reasonableness," is normally accomplished through a combination of one or more of the several price or cost analysis methods. There are however, a number of possible circumstances that may hinder effective price and cost analysis. The unique nature of certain products and the lack of a readily defined market may frustrate attempts to accurately assess a price through price analysis [Ref. 4:pp. 84-89]. Lack of data concerning the costs of producing and marketing the product may frustrate accurate cost analysis [Ref. 4:pp. 46-48]. Lack of time may prevent an accurate assessment using either price or cost analysis [Ref. 4: pp. 46-48]. For instance, an item which is urgently required due to military exigency or other emergency may necessitate expedited procurement, which may mean completing the purchase in one day or less. This limited amount of time may not provide sufficient time for a Government buyer to correctly assess price reasonableness. Thus, a Government buyer may face considerable challenges in deciding whether a price is actually fair and reasonable.

Given that an offered price may not always be fair and reasonable and urgency of need may create considerable

pressure to purchase the item anyway, the Government contracting officer faces a potential ethical dilemma: buy the item and violate a central tenet of Government contracting which she has sworn to uphold; or delay and wait until a fair and reasonable price can be obtained or another alternative to the procurement can be found, even if the delay may jeopardize national security objectives, human life or cost many times the price of the item procured [Ref. 4:p. 48]. It is theorized that the application of one or several bargaining approaches may be effective in resolving this type of dilemma.

### **C. SPECIFIC PROBLEM**

The following "procurement scenario" was devised to illustrate the general problem posed in this thesis.

You are a buyer for the Navy working at the Naval Inventory Control Point (NAVICP), Philadelphia. You had received a purchase request from USS CONSTELLATION (CV 64) for two high pressure steam reducing valves, parts which are essential for the operation of two of the ship's four steam-powered catapults. The catapults are currently out of commission due to lack of these two parts. The purchase request is stamped C-3 CASREP, meaning that a major degradation has occurred to a primary weapon system on board a critical element of the Nation's defense. In fact, the C-3 status of your requisition is automatic justification at NAVICP for you to deviate from the normal requirements of



the Federal Acquisition Regulation (FAR), based on the "urgent and compelling" nature of the requirement. You received the requisition yesterday and immediately called the source of supply, San Diego Valve and Industrial (SDVI), which quickly responded with an offer of \$90,000 for the two valves required.

You received the technical report a few hours ago. The report says that the valves were manufactured according to a design tailored to fit the unique pressure reducing requirements of the steam catapults and that the original manufacturer went out of business 20 years ago. Eight of the valves were originally procured by the Navy, four for CONSTELLATION and four spares for supply system stock. Supply stocks were exhausted 10 years ago when all four valves were requisitioned for a major overhaul of the catapults. The valve has not been purchased by the Government since the original valves were purchased thirty years ago. Purchase price for the original valves was \$1,500 each. The technical report said that SDVI is the only known source of the valves. The report also concluded, based on an analysis of the NAVSHIPS drawings for the valve, that manufacturing the valve, if a manufacturer could be found, would take a minimum of 16 weeks.

With some suspicion concerning the reasonableness of the offered price, you called SDVI and requested cost or pricing data that would allow you to justify the price.

SDVI refused to forward any cost or pricing data, telling you that it is against their company policy to provide such data. SDVI also reminded you that their price was below \$100,000, which is the Simplified Acquisition Threshold at NAVICP. Finally, SDVI told you that their price was "nonnegotiable." In short, you were told to "take-it-or-leave-it." CONSTELLATION is scheduled to depart on a six-month deployment in three days. You have been told in no uncertain terms that the ship must have these valves before getting underway. The Commander of NAVICP, Admiral Flag, will be briefed daily on the progress of this procurement.

The following conditions are explicit or implied in this "procurement scenario":

1. There is only one known source of supply.
2. The price offered is suspected by the buyer as being extremely unfair and unreasonable.
3. The seller (initially) refuses to provide any information which might help the buyer assess and validate the reasonableness and fairness of the price.
4. The Government holds insufficient cost and pricing data to determine the reasonableness of the price.
5. The parts are for a critical system on board USS CONSTELLATION (CV 64), which will deploy in a matter of days. "Unusual and compelling urgency" is therefore an appropriate justification for deviating from normal FAR procedures.

6. The chance of finding other parts which might be suitable substitutes for the parts appears remote, as the parts were designed specifically for the system on board USS CONSTELLATION (CV 64).

7. The offered price is below \$100,000, precluding the Government from requiring the contractor to provide cost and pricing data as a condition for the sale of the parts.

Though this situation may seem unrealistic, the genesis for evaluating exactly this type of procurement scenario began when the researcher was faced with just this type of situation while assigned to a major U.S. Navy ship repair and maintenance facility. Preliminary research indicated that other procurement personnel had also faced this type of procurement dilemma. Jocelyn Higgs in her thesis entitled, *An Examination of Acquisition Ethical Dilemmas: Case Studies for Ethics Training*, related a similar scenario

[Ref. 4:pp. 87-88]:

A new contracting officer, with less than six months of experience, receives an urgent requirement for communication devices needed by a combat unit deployed overseas. Only one contractor can meet the specifications and supply the communication devices. Realizing that the Government cannot obtain the communication devices from any other supplier, the contractor pads his price considerably. The contractor's proposal includes what the contracting officer thinks is an exorbitant amount of profit. He consults with several of his more experienced colleagues in the contracting office and they confirm that the profit does represent an 'outrageous' amount of profit.

The contractor refuses to provide cost or

pricing data in support of his proposal. In addition, the contractor objects to several clauses required by the Federal Acquisition Regulation (FAR), including the mandatory audit clause which grants the Government the right to "examine and audit - books, records, documents, . . . and accounting procedures . . . (FAR para. 52.215-2)," to evaluate contractor's costs.

During the contracting officer's preparation of the contract for award, a senior representative of the customer - an Army Colonel - calls daily, demanding that the contracting officer make award immediately. Because the communication devices are needed in support of an "unexpected" operation overseas, the Director of Contracting dismisses the contracting officer's concerns about the contractor's price and insists that the contracting officer sign the contract immediately. Long after the contract award, the contracting officer's misgivings about the fairness and reasonableness of the contractor's price still cause him to question the rightness of the decision.

The type of procurement scenario related in the two cases just summarized did not escape the attention of many classical economic theorists, who examined this type of case in the framework of a bilateral monopoly, or a one buyer, one seller market [Ref. 5:p. 64]. The insight gathered from the theoretical perspectives of many of these classical economists was used to formulate the theoretical foundation for this thesis.

#### **D. RESEARCH QUESTIONS AND OBJECTIVES**

In order to accurately analyze the problems faced by a Government buyer when offered a seemingly unfair or unreasonable price in a sole source procurement where accurate cost or pricing data to assess price reasonableness

are unavailable, the following research questions were developed:

**1. Primary Research Question:**

What bargaining tactics and strategy might be effective in purchasing goods or services from a sole source offeror when the price is perceived as unfair or unreasonable?

**2. Subsidiary Research Questions:**

a) What is a "Fair and Reasonable" price?

b) Are situations similar to the CONSTELLATION scenario experienced by Government contracting personnel?

c) Are there differences between experienced and inexperienced contracting personnel with respect to the elements of bargaining they consider important in cases like the CONSTELLATION scenario?

d) Are there differences between experienced and inexperienced personnel with respect to the bargaining strategy and tactics they would use if confronted with a procurement situation like the one in the CONSTELLATION?

e) What bargaining approaches are preferred by Government procurement personnel?

f) Is there any difference between the preferred bargaining approaches of experienced and inexperienced contracting personnel?

g) How should Government buyers prepare for bargaining with a sole source, "take-it-or-leave-it" offeror?



## E. SCOPE, LIMITATIONS AND ASSUMPTIONS

Analysis was limited to the procurement of goods or services below the Simplified Acquisition Threshold (SAT) of \$100,000. The purpose in assigning this limitation was to assist in examination of the impact that imperfect information has on the bargaining process. Although the threshold for requiring certified cost and pricing data is \$500,000 [Ref. 2:par. 15.804-2(a)(1)], a contracting officer may request information other than certified cost and pricing data to determine price reasonableness or cost realism when a contract's total acquisition cost exceeds \$100,000 [Ref. 2:par. 15.804-5(a)(2)].

The assumption that a market price, or a price derived or formed through the actions of a competitive market, is "fair and reasonable" is implied at points within this thesis. Lack of a precise definition for the term, "fair and reasonable" drives this assumption. A "fair price" implies that the price reflects an equitable division of trade gains between buyer and seller. "Reasonable" implies a price which reflects rationality, logic and knowing. Economic theory tells us that a price derived from a competitive market is an efficient price, or a price which optimizes the welfare of market buyers and sellers [Ref. 6: p. 469]. The author however, was unable to find a sufficient consensus in economic theory to conclude as axiomatic that an efficient price under a competitive market

condition is equitable, logical and rational, ergo, "fair and reasonable."

Additional analysis of what is a "fair and reasonable" price is undertaken in Chapter II.

#### **F. METHODOLOGY**

An extensive review of microeconomic theory and the branch of microeconomic theory commonly referred to as bargaining theory was used to provide a theoretical basis for this thesis. A significant amount of bargaining theory is devoted to the economic case of a bilateral monopoly, which greatly assisted the research effort. The bilateral monopoly condition can be applied directly to the procurement scenario drawn by the author to provide a basis for analyzing the primary and subsidiary research questions.

A survey of Government contracting personnel was also conducted to ascertain what bargaining tactics and approaches are currently used in the field and which tactics and approaches are considered to be most effective. Sixty-two completed responses were received from a wide variety of acquisition activities with contracting authority ranging from under \$2,500 (the micro-purchase threshold) to over \$10,000,000.

The survey begins by presenting the reader with a specific framework in which to consider bargaining tactics, strategy and approaches, the CONSTELLATION procurement scenario. The scenario presents a framework for extensive

analysis from both an economic and a psychological point of view, because it is a very practical example of a real-world bilateral monopoly.

Using the CONSTELLATION scenario as a basic point of reference, each survey participant was asked a series of questions. The questions were formulated around four general strategies or goals: (1) to evaluate the frequency with which scenarios similar to the CONSTELLATION or Higg's scenario occur in the real world, (2) assess the survey respondents' reaction to a "take-it-or-leave-it" type of offer and correlate that information to their preferred bargaining strategies and tactics, (3) gather information on what Government acquisition specialists viewed as potentially effective bargaining tactics and strategies to counter the bargaining advantages the seller holds in the CONSTELLATION scenario, and (4) gauge whether the survey respondent's preferred overall approach to bargaining is interest-based or position based.

## **G. THESIS ORGANIZATION**

Chapter I presented the basic research issues this thesis will analyze. The issue revolves around what bargaining strategy and tactics a Government procurement specialist should consider when faced with an urgent requirement, a potentially unfair or unreasonable price, lack of information and an adversarial buyer-seller relationship. These issues are summarized and analyzed

through the CONSTELLATION procurement scenario.

Chapter II will be used to establish a theoretical framework to view the bargaining scenario. Price theory, the issue of a "fair and reasonable" price, and the economic case of a bilateral monopoly, will be used to illustrate the problem from both the seller and buyer perspectives, as well as from the combined buyer/seller perspective.

Chapter III will examine the role that bargaining strategy and tactics play in effecting a bargaining outcome. Bargaining tactics and strategy are defined, and to further illustrate the role of bargaining strategy and tactics in the bargaining process, a general model of bargaining is presented.

Chapter's IV and V will be used to present and analyze the data derived from the thesis survey. The primary goal of these chapters is to analyze what Government contracting specialists view as potentially effective bargaining tactics and strategies to counter the bargaining advantages the seller holds in the CONSTELLATION scenario. Chapter VI of this thesis will present conclusions and recommendations for future research.





## II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

### A. GENERAL

This chapter presents a theoretical foundation for the subsequent analysis sections of this study. Two major areas form the locus for this review: microeconomic theory and bargaining theory. This section has three goals: (1) to evaluate the pricing options a seller has when pricing his product, (2) provide insight into the hypothetical relationship between the buyer and seller as posed in the survey procurement scenario, and perhaps what is most important, (3) to define the factors which impact each party's strategic behavior. An understanding of these concepts is fundamental to understanding the positions of the two parties in the scenario and the development of bargaining approaches which could be used to move the parties toward an agreement.

A discussion of pricing theory and pricing approaches begins this section and is used to illustrate the choices buyers and sellers must consider when evaluating price. The concept of "fair and reasonable" as it pertains to price will be discussed at this point.

Bargaining theory and the strategic aspects of the bargaining process beneficial to the analysis of the primary and subsidiary research questions will comprise the latter portion of this section. Bargaining theorists have often

used the microeconomic condition of a bilateral monopoly to illustrate the strategic interaction of the participants in a one buyer and one seller market. Unlike the economic model for a competitive market in which buyers and sellers maximize welfare through a market pricing mechanism, buyers and sellers under a bilateral monopoly scenario must implicitly seek a mutually agreeable price through bargaining. Thus, the bilateral monopoly case presents an ideal model for evaluating bargaining theory and the strategic elements of human interaction that characterize the bargaining process including "threat, bluff and strategic behavior in general." [Ref. 7:p. 1]

## **B. PRICING APPROACHES**

A seller may choose a number of different pricing strategies or approaches, depending on its long and short term goals and business objectives and the nature of competition in the market. A primary pricing approach is to choose a price which will maximize profit [Ref. 3:p. 246]. Conversely, a seller may price its product below marginal costs in order to "buy-in" or establish itself in a market. Along these lines, a firm may discount a profit maximizing price in order to gain market share, with the goal of recouping profits later [Ref. 1:p. I-17]. These pricing strategies and others are surveyed in this section.

Microeconomic theory holds that profit maximization is a primary motivation for a business interest and thus, a key

consideration in determining price [Ref. 8:p. 1]. Under competitive or market conditions, and absent externalities which would distort market conditions, profit maximization occurs at the point where the market demand equals market supply. In other words, the competitive nature of markets has the effect of driving the price down to the lowest possible point at which a rational seller would sell his product, the point where price just equals the cost of producing one additional unit, or the marginal cost [Ref. 6:p. 226]. A rational seller would not sell at any point below this price, since he would incur a loss [Ref. 8: p. 2].

Under monopoly market conditions, a sole source or monopoly may discriminate with respect to price [Ref. 6: p. 240]. A profit maximizing price for the monopolist is attained at the point where marginal revenue equals marginal costs. Thus, the profit maximizing monopolist will continue to sell as long as he continues to make a profit. Profit is not guaranteed in this scenario however, but is dependent on demand for the product. Total revenue must exceed total costs for profit to be achieved, which is contingent on the total quantity sold [Ref. 1:p. I-16].

The market share pricing approach is a strategy in which the seller prices his product lower than his competitors in order to gain market share [Ref. 1:p. I-17]. Alternatively called a "buy-in" pricing approach, this

strategy implicitly assumes that the seller is willing to trade a short term loss in order to penetrate a new market or to gain customers [Ref. 1: p. I-17]. By pricing below the competition, new sellers are potentially dissuaded from entering the market and current competitors may be driven from the market, leading to a greater market share for the seller who uses a market share pricing strategy. As the quantity produced and sold increases, the seller can expect average costs to fall, leading to profits in the long run [Ref. 1: p. I-17].

A market skimming strategy can be successfully applied by sellers that have a product with a comparative advantage over the competition [Ref. 1: p. I-18]. Realizing that some buyers are willing to pay a premium for the extra advantage their product provides, the seller prices its product above the competition, thereby attaining a higher profit margin than it would attain if it set a price in line with the competition. Apple Computer Company is a contemporary example of a firm which was able to successfully use this approach to sell its "Macintosh" line of computers at a premium over its competitors [Ref. 1:p. I-18].

Pricing strategy may also be determined based on incurred costs [Ref. 1:p. I-8]. Cost-based pricing strategies include markup pricing, margin on cost pricing and rate of return pricing [Ref. 1:p. I-8]. In each of these scenarios, it is producer costs, not market conditions

that guide the pricing strategy [Ref. 1:p. I-8].

Markup pricing is a method in which the producer establishes price as the sum of direct or total costs plus a desired percentage of cost [Ref. 1:p. I-9]. A producer using margin on cost pricing establishes price by summing direct costs or total costs and adding a desired markup percentage to attain a price. If total costs are used as the markup benchmark, profit is equal to the markup percentage multiplied by the quantity sold. Using direct costs as a benchmark, indirect costs must be subtracted from mark up percentage and multiplied by the quantity sold in order to establish profit [Ref. 1:p. I-10]. Rate-of-return pricing is analogous to margin on cost pricing except that a desired rate-of-return is substituted for a desired markup [Ref. 1:p. I-13].

### **C. FAIR AND REASONABLE PRICE**

Attainment of a fair and reasonable price is a requirement of all Government contracts [Ref. 2]. When market conditions set price, or costs are readily available for review, determining whether a given price is fair and reasonable is not normally excessively difficult. Defining what is a fair and reasonable price however, is not always axiomatic. The subjectiveness of the terms and their capacity for broad interpretation can lead to disagreement between a buyer and seller over what is a fair and reasonable price [Ref. 9:p. 67]. Additionally, a lack of a



market-based mechanism for setting price or the availability of current, accurate and complete cost data can likewise, lead to difficulty in accurately determining whether a price is fair and reasonable. Thorough analysis of what is "fair and reasonable" is necessary in order to resolve the primary thesis question under consideration.

Attainment of a fair and reasonable price is a requirement regardless of contracting method or contract type [Ref. 1:pp. I-25-I-34]. The requirement for a fair and reasonable price holds even under the six cases listed in FAR Part 6 that allow a contracting officer to deviate from the FAR requirements for full and open competition [Ref. 2:par. 6.303-2(7)]. Regardless of a lack of competition, national security, public interest, international agreement or industrial mobilization, the requirement to develop engineering or research capability or acquire expert services, or the presence of an unusual or compelling urgency, the FAR requires that the "anticipated cost to the Government (will) be fair and reasonable." [Ref. 2: par. 6.303-2(7)] Lack of cost or pricing data or an objective yardstick to evaluate what is a fair and reasonable price, and the universal Government contracting requirement that a fair and reasonable price be attained regardless of any exceptional circumstance or exigency, can create significant difficulties in evaluating price fairness and price reasonableness.

The term "fair price" suggests that a fair price should be equitable, moderate and correct [Ref. 10]. A "reasonable price" infers that the price achieved should be logical, rational, sound and wise [Ref. 10]. The FAR does not define "fair and reasonable." This omission from the FAR implies either that the definition of the term should be obvious to the informed reader or that because the term cannot be defined in objective terms, it cannot be readily or precisely defined. It is this incongruous aspect of the term that makes interpretation of the term so tantalizingly difficult in some circumstances. In practice, it is left to the knowledge and judgment of a skilled and informed buyer to decide exactly what is "fair and reasonable." Resolution of the issue between buyer and seller over what is a fair and reasonable price is often left to be resolved through bargaining or negotiation.

The Contract Pricing Reference Guide (CPRG), which is prepared jointly by the Air Force Institute of Technology and Federal Acquisition Institute provides an analysis of "fair and reasonable." [Ref. 1:p. I-25] A "fair" price is a price which is fair to both the buyer and the seller. "Fair to the buyer" is defined as either the [Ref. 1:p. I-26]

. . . fair market value of the contract deliverable, or the total allowable cost of providing the contract deliverable that would have been incurred by a well-managed, responsible firm using reasonably efficient and economical methods of performance, plus a reasonable profit.

"Fair to the seller" is defined as [Ref. 1:p. I-27]:

. . . a price that is realistic in terms of the seller's ability to satisfy the terms and conditions of the contract.

A "reasonable" price is defined as [Ref. 1:p. I-29]:

. . . a price a prudent and competent buyer would be willing to pay, given available data on (1) market conditions, (2) alternatives for meeting the requirement, (3) the evaluated price of each alternative, and (4) technical evaluation factors (in "best value" competitions).

Within the definitions of fair and reasonable cited above, knowledge related to at least one of the following areas is explicitly required to achieve an acceptable determination of price fairness and reasonableness: (1) knowledge of the elements which make up either the costs incurred in producing the contract deliverable; (2) the price that would be paid for the product under a given set of market conditions, or (3) the alternatives for meeting the requirement. Without such information, the Government buyer has little to fall back on to ensure the offered price is fair and reasonable. When such information is held principally by the seller, it holds considerable pricing discretion and considerable bargaining power [Ref. 11:p. 3-12].

"Fair and reasonable" is a term which evades a precise definition. Lack of an objective measuring stick for what is fair and reasonable and the inherent intangible nature of the elements that define the term mean that a "fair and

reasonable" price determination may not be easily attained and may be contingent on the interpretation of less than perfect information. This should not however, lead one to conclude that they cannot decide that a price is unfair and/or unreasonable. Within the context of a contractual agreement, the consensus on what is a fair and reasonable price is dependent on the buyer's and seller's opinion of the value of the product or service procured [Ref. 9:pp. 66-67]. This is the essence of what bargaining is and why it is theorized that bargaining approaches should be useful in aiding the determination of what is a fair and reasonable price.

#### D. BARGAINING THEORY AND BILATERAL MONOPOLY

Bargaining holds particular interest to economists because of the role bargaining plays in the process of exchange. Considerable study has been devoted to analyzing the effects of bargaining on the exchange process and the impact bargaining has on the determination of price [Ref. 12:pp. 103-110]. The economic case of a one-buyer, one-seller condition, or bilateral monopoly, has particular interest for bargaining theorists because the high degree of mutual dependence between the parties and lack of a market force to set a price implies that bargaining must take place before an exchange agreement can be reached [Ref. 12:p. 113].

A frequently cited example in the literature of a

bilateral monopoly condition is the case of a unionized workforce engaged in negotiations with its employer [Ref. 5:p. 1]. Both the union and the firm establish a price for the good sold, which in this case is labor. The union may establish for example, that its labor is worth 10 dollars per hour. The firm, in turn, may establish a value on the employees' labor of 20 dollars per hour. Any price the union receives above its reservation price of 10 dollars is surplus, just as any price the firm receives below its reservation price of 20 dollars is profit. The net potential gain in trade between union and firm is 10 dollars. The division of this potential gain in trade, and the role that bargaining plays in achieving it is however, the subject of considerable theoretical debate [Ref. 12:p. 113].

Despite more than 100 years of analysis by some of the 19th and 20th centuries most noted economists, there remains considerable disagreement within the literature which addresses the bilateral monopoly case. The bilateral monopoly case has been described as a bargaining paradigm by some, without a determinant quantity or price solution [Ref. 13:p. 29]. Other theorists have concluded that a determinate quantity solution is obtainable [Ref. 12:p. 111]. Still other theorists have found determinant solutions for both quantity and price. A discussion of the varied analyses supporting each of these positions is useful

in illuminating the factors which weigh on the bargaining process.

Analysis of the bilateral monopoly case can be traced back to the work of Edgeworth and his study of the relationship between trade unions and management [Ref. 5:p. 1]. Of particular interest to Edgeworth was how unions could affect wages in what was considered to be a perfectly competitive market [Ref. 5:p. 1]. Edgeworth's analysis concluded that the price of labor (wages) was indeterminate under a bilateral monopoly condition such as a union-management relationship. A range of equilibrium wages however, could be constructed using the intersection of the opposing parties' utility functions to create a "contract curve." [Ref. 12:p. 105] The contract curve range was defined at the lower end of the range by the wage that management would be forced to pay to maintain an adequate labor force, and at the upper limit by the maximum wage the union could demand without creating unacceptable unemployment [Ref. 5:p. 2].

Edgeworth's analysis spurred further study. A. L. Bowley's 1928 analysis of the bilateral monopoly case is frequently referenced in the literature and is viewed by many current day economists as the first analysis to provide a theoretically correct solution to the problem, though there is some disagreement among theorists over whether Bowley felt the joint profit maximizing output solution



should be viewed as a determinant solution [Ref. 12:p. 108].

Bowley presented his theory via three separate cases involving a monopolistic supplier of iron ore and a monopsonistic steel producer: Case I, in which the steel manufacturer could dictate the price of ore, but the steel producer decided output; Case II, in which the ore supplier dictated price, but the steel producer determined output, and Case III, where the ore supplier and steel manufacturer combined [Ref. 12:p. 108]. In Cases I and II, Bowley concluded that the party that established price gained the larger share of the profits. The stronger party established the price and was thus a price maker, while the weaker party was forced to be a price taker, accepting any price so long as marginal costs (in the case of the monopolist) or marginal revenues (for the monopsonist) were not exceeded and the weaker party was allowed to make a profit. Cases I and II were determined to be socially disadvantageous however, when compared to Case III, where collusion occurred, as higher prices and lower outputs result under Cases I and II [Ref. 12:p. 108]. Under Case III, a determinate output is attainable at the quantity the monopolist and monopsonist would produce if the two parties combined. The output quantity that the colluding parties would agree to produce is the output which maximizes the joint profits of the two firms.

Bowley suggested that division of the combined profit

could possibly be determined at the intersection of the supplier's offer and producer's demand curves, but concluded that this position was unstable and unmaintainable because of the parties' inclination to set their own prices [Ref. 12:p. 108]. Thus, a determinate price was not attainable. A determinate profit maximizing quantity would be maintained only so long as the two firms colluded.

Zeuthen's theory of bilateral monopoly used Edgeworth's "contract curve" to create a "range of practicable bargains" [Ref. 14:p. 105]. Within this range, any agreement was more advantageous to the parties than the alternative, which was non-agreement, or conflict. This conflict was what Zeuthen termed "economic warfare," or the "complete temporary discontinuation of all connections with the other party or threats of such a discontinuation." [Ref. 14:p. 101] Zeuthen theorized that the expected costs of the conflict were measurable and would be compared to the expected outcome of the conflict in order to determine the "limits of the fighting sphere," or whether either party might gain an advantage through fighting [Ref. 14:p. 105].

Zeuthen concluded that while the costs and benefits of fighting a conflict were determinable, the equilibrium price was indeterminate, though the price would still fall within the range of "practicable bargains." [Ref. 14:p. 106] This lead Zeuthen to conclude an optimal price under a bilateral monopoly condition was indeterminate, but that there were

determining forces that would influence the ultimate price attained, including "skill at negotiation, changing sentiments among the rank and file, accidental circumstances, bluff, etc." [Ref. 14:p. 106] Ergo, Zuethen's theory is significant for introducing subjective bargaining factors into the bilateral monopoly equation, such as negotiation skill, and its attempt to find "values and quantities" for these bargaining elements [Ref. 15:p. 32].

Zeuthen's theory is also significant for its discussion of *risk* in the bargaining process. Pen summarizes Zeuthen's treatment as follows [Ref. 15:p. 32]:

At each step in the bargaining process the bargainer must compare the possible advantages and disadvantages. The advantages consist in the attainment of a more favorable price. The disadvantages consist in the possibilities of a conflict. The decisive factors in a bargainer's choice are not only the magnitude of these advantages and disadvantages, but also the bargainer's estimation of their possibility. The latter designation, (is) designated as the *risk* of a conflict . . . .

Zuethen's analysis of risk succinctly illustrated a basic concept of bargaining advantage, as well as an iterative approach of evaluation and reevaluation as a characterization of the process each party went through to attain a relative estimation of bargaining advantage. This approach was later applied by other theorists, notably Jan Pen, to other subjective elements of bargaining [Ref. 15:p. 32].

Other theorists, building on Zeuthen's work, notably Schneider, Wicksell and Schumpeter, argued that a determinate price and stable equilibrium could be attained in bilateral monopoly, "provided the parties are peaceful profit maximizers rather than contenders for dominance resorting to bluff and economic warfare." [Ref. 12:p. 108] Profit maximization, when considered a superior strategy to dominance or economic warfare, was thus viewed as the key determinant in achieving a stable, determinate price in a bilateral monopoly condition. In sum, these theorists argued that profit maximization would not only lead the bargainers to a range of equilibrium prices as Edgeworth and Bowley had espoused, but given the assumption that the parties were "peaceful profit maximizers," a determinate equilibrium price for the intermediate good traded was attainable.

Von Nuemann and Morganstern's monumental *Theory of Games and Economic Behavior* introduced the game theoretic approach to bargaining theory [Ref. 16:p. 155]. Von Nuemann and Morganstern ascertained a determinate bargaining solution to the bilateral monopoly case, but found it necessary to limit their analysis to what they called the "zero-sum game," or a bargaining scenario in which the division of profits is "all or none." [Ref. 16:p. 155]. Nash adopted Von Nuemann and Morganstern's game theoretic

approach in his treatise on bilateral monopoly, *The Bargaining Problem* [Ref. 16:pp. 155-162]. In *The Bargaining Problem*, Nash achieved a definite solution to the bilateral monopoly condition at the point where each party maximized a numeric utility that expressed the opportunity that each party would receive by engaging in bargaining [Ref. 5:p. 7]. In Nash's most basic illustration of the theory, this point is exactly equal to the point on Nash's agreement frontier at which each party's utility was exactly one half of what it would be if each party achieved its most desired outcome [Ref. 5:p. 11]. In order to achieve this optimal solution, Nash made nine assumptions [Ref. 5:pp. 8-10]:

- a. The parties are rational and expect the other to be rational;
- b. The parties attempt to maximize their own utility or gain;
- c. Actors have complete information concerning the utility of alternative settlements for themselves and their opponents;
- d. Neither party will settle for an agreement that is not Pareto-optimal;
- e. Both parties will bargain in good faith. That is, once a bargainer makes an offer it cannot be withdrawn, and once an agreement is reached, it is enforceable;
- f. If the parties' final demands or offers are incompatible, bargainers get the utility associated with failure to reach agreement;
- g. If the set of possible solutions is limited to a more restricted range on the agreement frontier, the determinate solution remains the same as long as the original solution, based on the complete agreement frontier, is included in the more restricted set;
- h. The only significant differences between the parties are reflected in their utility functions;
- i. An order preserving linear transformation

of the utilities does not change the solution.

The many assumptions detailed in Nash's approach illustrated the difficulty in distilling the bilateral monopoly problem into a realistic set of mathematical equations which could then be used to formulate a determinate solution.

Understandably, Nash's assumptions met with some resistance. Friedman succinctly summed up the limitations of Nash's approach [Ref. 17:p. 1]:

Nash gives a unique solution, but does so only by assuming a symmetrical, and efficient solution, which in the case of a bilateral monopoly amounts to assuming the answer.

Pen's *A General Theory of Bargaining* openly criticized bargaining theory which espoused assumptions which would simplify or inhibit the conduct and knowledge of the bargaining parties [Ref. 15:pp. 24-26]. He singularly pointed out the assumptions of "rational conduct, neutral risk valuation and perfect insights" made under the Nuemann-Morganstern approach as "too specific," and similarly criticized Nash's supposition of equal bargaining skill [Ref. 15:p. 25].

Pen's critical view fell equally on those theories of bilateral monopoly which ignored the subjective elements of the bargaining process [Ref. 15:p. 25]. He argued that Bowley's theory (and the complimentary work of Henderson, Marshall and Stackleberg, among others), failed to find a



determinate price solution because the theory failed to elucidate the relationship between the price and psychological factors, which Pen termed in the singular as "datum" [Ref. 15:p. 24]. Pen describes "datum" in the following terms [Ref. 15:p. 27]:

Because all social phenomena are to a certain degree interdependent, all phenomena are, intrinsically, determining factors in the outcome of the bargaining process. Somewhere in the causal chain, we have to place a limit to our investigation. The first factor at the other side of the limit is called a datum.

Pen's primary data for constructing his theory of bargaining were what he called a bargainer's *ophelimity functions*, or the satisfaction that a bargainer achieved through the attainment of a certain price [Ref. 15:pp. 24-26]. In the simplest case, Pen's *ophelimity function* corresponded to a buyer or seller's profit function. Aside from profit, psychological factors might also contribute to a bargainer's *ophelimity function* [Ref. 15:p. 28]:

The attaining of a certain result may have a certain value in itself, just as the hunter who shoots a rabbit will derive a certain satisfaction from it, quite apart from the expected pleasure of his dinner . . . . Sometimes it is apparent in a negative sense, especially when the bargainer is forced away from a price he has heavily insisted upon, and he fears to 'lose face.' In this case the *ophelimity function* may show a sharp peak at the price which was claimed before.

Pen's *ophelimity functions* were thus, multidimensional and possessed the capability for accounting for a complete

range of objective and psychological or subjective bargaining elements. Elasticity of demand for labor for example, was only one of many factors to consider in determining a union leader's *ophelimity function* [Ref. 15:p. 28]. Other factors, such as the union member's preference for a particular wage and the leader's perceived loss of member confidence should he fail to realize a satisfactory wage rate, might also be factored into the function [Ref. 15:p. 28]. Pen concluded by stating that *ophelimity functions* could be formulated to reflect all factors that determine a bargainer's preference for a certain bargaining outcome [Ref. 15:p. 29].

Pen's theory was also significant for its illumination of the concept of bargaining power. Pen describes bargaining power in the following terms [Ref. 15:p. 40]:

Given the *ophelimity functions* (expressing the opposed wills of the bargainers), economic bargaining power depends on conflict *ophelimities*, the risk valuation functions, and on the capacity of the parties to shift these determinants.

Pen's theory thus provided a framework for defining and evaluating bargaining power, based on the subjective and objective elements which made up the bargainer's *ophelimity functions*, each party's particular and relative perception of conflict and risk, and on the capacity of the parties to influence or change their opponent's perception of these elements.

A principal purpose of Bacharach and Lawler's general theory of bargaining was to analyze the determinants and consequences of bargaining power and describe the connection between bargaining power and bargaining tactics [Ref. 5:p. x]. Within this framework, bargaining power was viewed as a "primary framework" or "schemata of interpretation" for the bargaining process [Ref. 5:p. 43]. For Bacharach and Lawler, bargaining power was the "essence of bargaining" and the [Ref. 5:p. 43]:

. . . pivotal construct for a general theory of bargaining . . . . Bargaining power pervades all aspects of bargaining and is the key to an integrative analysis of context, process and outcome.

Bargaining power is further described as a "sensitizing concept or primitive term." [Ref. 5:p. 44] That is, bargaining power cannot be defined precisely, but "points to a series or range of phenomena but not in a manner that allows precise definition or measurement." [Ref. 5:p. 44] Thus, bargaining power is viewed as "tactical and subjective in nature." [Ref. 5:p. xi].

Bacharach and Lawler's theory is important for the emphasis it places on the relationship between bargaining power and tactics. Tactics are viewed as the "intervening link between potential power and bargaining outcomes." [Ref. 5:p. 47] "Bargaining tactics are designed to manipulate equalities or inequalities in power and thereby produce an agreement favorable to one's own interests." [Ref. 5:p. 179]

Bacharach and Lawler's general theory of bargaining offers a dependence approach, or what they subsequently define as "dependence theory" as a concept for analyzing bargaining power [Ref. 5:p. 59]:

On the most general level, dependence refers to the degree that parties have a stake in the bargaining relationship. High stakes indicate that bargainers attribute considerable importance to maintaining the bargaining relationship. The comparative and mutual stakes of bargaining parties are essentially grounded in the resource context . . . . A theory of bargaining therefore, must provide a framework that grasps the essential components or variables of the dependence relationship and also relates this ambiguous context to tactical action at the bargaining table.

Bacharach and Lawler's theory concludes by drawing three general propositions that relate dependence and bargaining power [Ref. 5:p. 209]:

- (1) An increase in the dependence of Party A on Party B increases B's absolute bargaining power.
- (2) An increase in the ratio of A's dependence on B to B's dependence on A, increases B's relative bargaining power.
- (3) An increase in the sum of A's and B's dependence increases the total bargaining power in the relationship.

Three additional hypotheses are formulated based on these propositions [Ref. 5:p. 209]:

- (1) A decrease in A's alternative outcome sources or an increase in A's commitment to the outcomes at issue increases B's absolute bargaining power.
- (2) An increase in the ratio of A's alternatives or commitment to B's alternatives or commitment increases B's relative bargaining power.
- (3) An increase in the sum of both parties'

dependence along the alternatives and commitment dimensions increases the total bargaining power in the relationship.

Blair, Kaiserman and Romano's analysis of the bilateral monopoly case, including a review of 28 microeconomic texts which treat the subject of bilateral monopoly, affirmed Bowley's analysis as theoretically correct while using Bowley's framework to support the conclusion that the joint profit maximizing intermediate quantity solution is also correct [Ref. 18:p. 831]. Their basic analysis operated under three assumptions: (1) price/quantity negotiations must be held before an agreement can be reached (2) output quantity must be specifically addressed during the negotiations, and (3) joint profit maximization was an incentive for the parties [Ref. 18:p. 839]. Blair, Kaiserman and Romano's analysis used iso-profit curves to define the limits and the shape of the contract curve. The contract curve was shown to be comprised of the points of tangency between the seller and buyer's iso-profit curves [Ref. 18:p. 838]. In this manner, the researchers demonstrated that the contract curve was a vertical line which spanned a range of prices at the point where the joint profit maximizing quantity was produced [Ref. 18:p. 839].

Blair, Kaiserman and Romano also addressed the issues surrounding the determinateness of the price of the intermediate good. The trio concluded that the price of the intermediate good would be determined through bargaining,

just as the quantity was determined [Ref 18:p. 835]. Though they appear to favor a determinant price solution, their analysis does not attempt to present such a solution, though the authors do suggest that a game theoretic approach may be helpful [Ref. 18:p. 839]. The authors qualify this aspect of their analysis by stating that a credible take-it-or-leave-it offer would lead to a determinate price. "If one of the bilateral monopolists could make a credible commitment to withdraw from the market in the event of a breakdown and make a single take-it-or-leave-it offer on the contract curve, then the contract curve becomes infinitely short." [Ref. 18:p. 839] The weaker party to the negotiation would act as a competitive firm and would accept any price offered that would return a profit, since the alternative would be no profits [Ref. 18:p. 839]. This aspect of the analysis is analogous to Bowley's Case I or Case II approach: one party dominates the negotiation relationship in each of these cases, forcing the weaker party to acquiesce to the terms of the dominant party. Any other alternative would lead to a negotiation breakdown and to zero profits.

Empirical studies accomplished by Siegel and Fouraker in the 1960's supported the assertion of a determinate quantity, but an indeterminate price under bilateral monopoly [Ref. 19:p. 69]. Using data compiled through a series of experiments featuring mock negotiations within a



number of different bilateral monopoly scenarios, the researchers concluded "that there is a clear tendency for bargainers under simulated bilateral monopoly situations to negotiate contracts at that quantity which maximizes the joint payoff." [Ref. 20, p. 36] The researchers also concluded however, "that traditional economic forces cannot be depended on to yield an adequate explanation of the prices arrived at in bilateral monopoly bargaining." [Ref. 19:p. 69] The "personal characteristics" of the bargainers are proposed as the primary determinant of the joint and individual payoffs to each of the parties [Ref. 19:p.69].

The two researchers identify information as a significant bargaining element in the context of bargaining under a bilateral monopoly scenario. Their assertions are summarized below [Ref. 20:p. 36]:

1. There is tendency for bargainers to negotiate contracts which are Pareto optimal.
2. Increasing the amount of relevant information available to bargainers strengthens the tendency toward Pareto optimal agreements.
3. Increasing the amount of information available to the bargainers tends to lead to a more equal division of the joint pay-off.
4. Supplementing the higher payoffs to only one player so as to increase the utility to him of these outcomes tends to increase his payoff at agreement.
5. If both bargainers have complete information, they tend to be more modest in their initial demands than they are in cases of incomplete information.
6. Occasionally when an opponent offered an unexpectedly generous bid . . . . The subject's usual reaction was to raise his own payoff request.
7. There is some evidence that increasing the

information to one player alone tends to decrease his payoff at agreement.

Siegel and Fouraker go on to derive a general model of bargaining wherein a bargaining party's aspirations are determined as a function of the party's minimum and maximum payoff expectancy, a party's rate of concession and ability to perceive his opponent's concession rate, and the duration of the negotiations.

Siegel and Fouraker's empirical work was thus important for identifying key elements important to the specific case of a bilateral monopoly and for bargaining theory in general. The personal characteristics of the bargainers, the information available to the bargainers, the bargainer's aspirations, time, each bargainer's rate of concession and each bargainer's ability to perceive his opponent's concession rate all play a role in Siegel and Fouraker's model. This information thus adds valuable insight into understanding the bargaining process, the behavior of the bargaining participants and the resulting prices under a bilateral monopoly condition.

Machlup and Tabor state, "One point on which nearly all economists of the twentieth century have agreed concerns the indeterminateness-in pure theory-of the division of profits between the two parties in a bilateral monopoly." [Ref. 12: p.112] This position is not universally held however. Nash's analysis supported a determinant price solution as

did the earlier works of Schumpeter, Schneider and Wicksell. The researcher found two analyses completed after Machlup and Tabor's work that offer a determinant price solution for the intermediate good traded. It is interesting to note that these analyses assumed either perfect information, or at a minimum, that buyer and seller knew each other's respective marginal cost and marginal revenue functions, and bargained accordingly. These analyses are briefly summarized in the following paragraphs.

Truett and Truett's analysis argued that a determinant price is possible, given the assumption that the seller knows the demand function of the buyer and buyer knows the marginal cost function of the seller [Ref. 21:pp. 260-270]. Their analysis suggested that if one party was receiving less than its equilibrium share of the profits, that party would balk, break its contract with the other party, slow up orders, reject merchandise as being defective, or use some type of ploy in order to obtain a fairer share of the profits, thus leading the parties toward an equilibrium price [Ref. 21:p. 265]. It is however, implicit in their analysis that the party receiving less than its fair share of the profits knows it is getting the short end of the bargain. The authors admit as much when they conclude that one party, "might be willing to act as a price taker . . . . (1) when coercive action is undertaken by the other or (2) when information is incomplete." [Ref. 21:p. 265]

Information requirements are also mandated in Dobbs and Hill's solution to bilateral monopoly pricing. Dobbs and Hill suggested a non-uniform pricing schedule might be used to move the parties towards an optimal solution [Ref. 22: p.480]. However, even under the uncertainty case proposed by these authors, it is assumed that both parties know the supplier's cost function as well as the structure of the demand, or marginal revenue curve of the buyer [Ref. 22:p. 482]. Knowledge of a seller's costs and buyer's revenue functions was thus a prerequisite for attaining a determinant price under Dobbs and Hill's analysis.

#### **E. SUMMARY**

This section considered the theoretical question of price determination from three separate perspectives: (1) the seller's perspective, (2) the Government buyer's perspective and (3) the combined perspective as seen through the process of bargaining.

A seller might consider a number of possible pricing approaches. Which approach works best for the seller depends on market conditions, the profit and market share goals of the seller, the ability of the seller to discriminate with respect to price and the certainty with which a seller can ascertain costs.

Understanding what pricing strategies a seller might use given a particular market setting is critical for a Government buyer [Ref. 23:p. 9]. Each pricing approach and

each element within a pricing approach lends itself to the process of price analysis and answering the pivotal question of whether the price offered is fair and reasonable.

Fair and reasonable cannot be precisely defined. We can normally safely assume that if a price is derived from the forces of a competitive market, then the price is fair and reasonable. However, not all markets reflect sufficient competition to be able to assume a price is fair and reasonable, and even competitive markets are subject to externalities or other market aberrations which can distort efficient pricing.

The impact that bargaining has on price made up the tertiary portion of this section. An overview of significant bargaining theory was developed in order to contrast the viewpoints of bargaining theorists over the last 100 years. The case of a bilateral monopoly was implicit or explicit in much of this work, and since the primary and subsidiary research questions are built on a bilateral monopoly scenario, this case was emphasized.

There still exists some confusion over the correct solution to the bilateral monopoly case [Ref. 18:p. 831]. The solution which has engendered the most acceptance is the solution of a determinant quantity, indeterminate price based on Bowley's analysis [Ref: 12:p. 111].

Other theorists argue the position that both price and quantity are determinate. Schneider, Wicksell and

Schumpeter [Ref. 12:p. 108], subsequently Nash [Ref 16:p. 155], and more recently Truett and Truett [Ref. 21:p.260] and Dobbs and Hill [Ref. 22:p. 479-489] all argue that a determinant price is possible, given certain assumptions. Schneider, Wicksell and Schumpeter concluded that peaceful profit maximizer's would share the profits equally. Nash's game theoretic solution concluded that the bilateral monopolists would share equally in the joint profits. Truett and Truett's analysis suggested a seller or buyer who knew or had information it could obtain a greater share of the profits would resort to ploys or tactics which would incentivize the other party to offer a more equal share of the profits, thus leading the parties toward an equilibrium price. Information was also a necessary requirement in Dobbs and Hill's solution to bilateral monopoly pricing. Both parties were assumed to know the supplier's cost function as well as the structure of the demand, or marginal revenue curve [Ref. 22:p. 482]. The assumption that each party had correct information with respect to the other's cost or revenue functions was thus a common thread linking all analyses which offer a determinant price solution.

Bargaining theorists are therefore divided over the impact that the bargaining process has on determining price and achieving a bargaining agreement under bilateral monopoly. One order of theorists, including Nash, Schumpeter, Schneider and Wicksell, tend to see bargaining



as a passive means for moving the two opposing parties toward a determinate equilibrium price that optimized the benefits each party receives in exchange. Information concerning the seller's and buyer's cost and revenue functions allow the amount of profits available to be determined by both parties, leading the parties toward an equilibrium solution.

Another order of theorists, including Zuethen, Pen, Bacharach and Lawler, and Siegel and Fouraker, saw the bargaining process as more dynamic, while dismissing the assumptions about information used by those who support the notion of a determinant price. These theorists emphasized the impact that the behavioral and psychological aspects of bargaining have on the bargaining process, including the need for information, the parties' expectations and aspirations, each party's commitment, their perception of their opponent's commitment, as well as bargaining power and bargaining skill.

### III. BARGAINING TACTICS

#### A. GENERAL

The principal question of this research asks what bargaining tactics and strategy a Government buyer might use to effectively purchase goods or services from a sole source offeror when the price is perceived to be unfair or unreasonable. It is hypothesized that a Government buyer should be able to effect a "better bargain" through the use of bargaining tactics and strategy. The principal question then, is a question of strategic behavior. What makes one bargaining tactic effective and another bargaining tactic ineffective? How does one evaluate what is a "good" bargaining tactic and what is a "bad" bargaining tactic? What bargaining elements should one consider when formulating a specific bargaining strategy or tactic? And, what role does the market setting, such as the setting provided in the "procurement scenario," a Government-contractor bilateral monopoly, play in determining bargaining tactics?

These questions defy the formulation of an easy answer. They are as fundamentally difficult to answer as is the formulation of a determinate price solution for the economic condition of bilateral monopoly. Why should this be so? In short, it is because strategic behavior presents an almost unlimited array of determinants, choices and approaches. In

bargaining, this is reflected in the interaction of various bargaining elements, the relative importance of each element to the bargaining parties, and the possibility that the values the parties hold for any particular bargaining element may change as a result of the bargaining process [Ref. 5:p. 47]. Friedman sums up the problem with strategic behavior rather succinctly when he states that [Ref. 7:pp. 1-2],

The analysis of strategic behavior is an extraordinarily difficult problem. John Von Neumann, arguably one of the smartest men of this century, created a whole new branch of mathematics in the process of failing to solve it. The work of his successors, while often ingenious and mathematically sophisticated, has not brought us much closer to being able to say what people will or should do in such situations.

Following this line of reasoning, this chapter will not attempt to formulate an answer to the questions at hand by proposing that an optimum bargaining tactic or range of bargaining tactics can be realized through analysis. A comprehensive review and analysis of bargaining tactics and strategy is therefore not necessary or desirable. It is not the intent of this chapter to make the reader an expert in the application of bargaining tactics for a given procurement scenario. Rather, the focus of this chapter is to establish a framework for formulating and understanding bargaining tactics and for interpreting bargaining behavior.

To accomplish this end, a general model of bargaining is presented for the purpose of illuminating the key factors

which may affect the bargaining process, including the initial bargaining position, bargaining power, bargaining tactics and bargaining outcomes.

## **B. BARGAINING TACTICS AND STRATEGY**

Bargaining tactics receive considerable attention in the literature of negotiation and bargaining. A large number of complementary definitions are available in the literature. Bargaining tactics may be defined as a "particular action deliberately committed or omitted to support a predetermined strategy." [Ref. 24:p. 7] Expressed in a similar manner, "tactics are the tools used to implement strategies." [Ref. 25:p. 14] Tactics may also be viewed as the "vehicle through which bargaining parties attempt to maximize gains and minimize losses." [Ref. 5:p. ix]. Warshaw describes tactics as [Ref. 26:p. 119],

. . . a series of steps in pursuit of an objective. No single tactic is expected to carry the day. Rather, each tactic is designed to make a specific contribution toward the ultimate goal.

Alternatively, a bargaining tactic may be described as an approach, maneuver, strategy, stratagem, ploy, scheme or plan.

Bargaining tactics are much more frequently described in terms of what the tactics are intended to do, rather than defined, the former being easier to accomplish while providing a better illustration of what the tactic is

designed to do. A series of different bargaining tactics were proposed as a method for resolving the dilemma posed in the thesis procurement scenario. As part of this research, 62 Department of Defense procurement specialists were queried on what bargaining tactics they have used or would use in the future to resolve the procurement scenario dilemma. The following bargaining tactics, taken from Chester Karrass' book, *Give and Take, the Complete Guide to Negotiating Strategies and Tactics* [Ref. 9], were offered in the survey:

(1) Appeal to seller's patriotism.

(2) Implicitly notify the seller that future Government business for his firm may be sharply curtailed unless he bargains in good faith.

(3) Tell the seller in no uncertain terms that future Government business for his firm may be sharply curtailed unless he bargains in good faith.

(4) Tell the seller that you need his help in order to determine that the offered price is fair and reasonable.

(5) Threaten to bypass the seller's representative you are dealing with and appeal for a fair and reasonable price from his boss.

(6) Use probing questions (e.g., How did the seller arrive at the price he is asking for the part) in order to test the firmness of the seller's position.

(7) Inform the seller of possible alternatives to buying the part from the seller (e.g., possibly repairing the valve).

(8) Lie to the seller by informing him that you have another source of supply.

(9) Tell the seller that you plan to bring in higher management to assist you.

(10) Make a low ball counteroffer.

(11) Make a counteroffer explaining the amount offered is all you have.

(12) Explain that the seller's price is much higher than what you expect the part should cost and ask for a cost breakdown.

(13) "Walk away" from the seller's offer, with the hope that you can resume bargaining on better terms later on.

(14) Offer the sole source a letter contract.

(15) Tell the seller, "You have got to do better than that!"

(16) Tell the seller that a new design for the part you wish to buy from him is "In the works."

(17) Tell the seller that his position has angered your boss.

(18) Patiently wait for the seller to offer a better deal.

The tactics cited above can be viewed as potential tools for any number of potential bargaining strategies.



What matters in the present however, is how these tactics may be applied to the dilemma posed in the procurement scenario. Within the model approach that will be presented in the next section, bargaining tactics such as those offered in the survey may be applied towards three broad strategies: (1) acquiring, interpreting and applying information with respect to each party's determinants of bargaining power; (2) expressing bargaining power, either real, implied or potential; and, (3) the application of bargaining power towards a bargaining outcome.

While the term, "bargaining strategy" is frequently interchanged with the term, "bargaining tactic," the general consensus within the literature treats a tactic or tactics as a subset of a bargaining strategy. Thus, a bargaining strategy is normally viewed as a plan of action used to achieve a goal [Ref. 27:p. 10].

As with tactics, describing bargaining strategies is a more illuminative method of illustration than is an attempt to define a particular bargaining strategy. The number of potential bargaining strategies a Government contracting specialist may make use of is extremely large; one study of Government contract negotiators offered the following ten strategies [Ref. 27:p. 57]:

(1) COMBINATION (THE "BIG POT"): Introducing many issues at one time, using "throw-away" points to

get major concessions.

(2) COVERAGE ("BOTTOM-LINING"): Negotiating on total cost/price basis versus item-by-item.

(3) DEFINITE ACTION ("TESTING THE WATERS"): Taking a definite position forcing the opposition to either accept or reject your position.

(4) LIMITS: Using authority, time, budget, or other limits to pressure concessions from the opposition.

(5) PARTICIPATION/INVOLVEMENT: Designing the team composition to narrow or broaden the areas of negotiation (use of experts for example).

(6) PATIENCE ("BUYING TIME OR STALLING"): Using delay TACTICS to prolong consideration of an issue or to counter a time limit strategy.

(7) SURPRISE: Any unexpected action to gain acceptance of a point or obtain concessions from the opposition.

(8) REVERSAL ("THE LESSER OF TWO EVILS"): Presenting increasingly more rigid demands forcing the opposition to accept a lesser (preceding or following) offer - your true objective.

(9) STATISTICS ("FIGURES DON'T LIE"): Using learning curves, trend analysis, or historical records as the primary support for your position.

(10) STEP-BY-STEP: Presenting a series of acceptable minor points to obtain a major concession: also used to counter "The Bottom Line" strategy.

Why the author referenced here selected these ten particular strategies to formulate and conduct his research is not addressed within his research. It is known, that the same ten strategies were used in a similar research project and therefore these strategies may have been chosen in order to be able to compare the studies. They are mentioned here to illustrate to the reader a range of possible strategies a Government contracting specialist might use in a given procurement.

Robert P. Johnston suggested three strategies are common to a negotiation: competitive, collaborative, and subordinative [Ref. 28:p. 156]. Competitive was described as a "We-They" or "Win-Lose" approach, and was characterized by low levels of trust between the negotiating parties, unpredictability, the use of threat and bluff, and potential use of irrational arguments to support a party's position and commitment [Ref. 28:p. 158-159]. Collaborative strategy had a goal of "Win-Win" in which both parties pursued a strategy which reflected common goals, trust, openness and mutually satisfying solutions [Ref. 28:p. 158-159]. Active listening, jointly exploring alternatives, and the development of constructive relationships were characteristics of this strategy [Ref 28:p. 158-159]. Subordinative negotiation strategy was characterized by potentially self-defeating "Win-Lose" behavior, wherein one party gave up position in order to meet the needs of the other party [Ref p. 158-159]. "Concern with harmony results with total avoidance of conflict," effectively turning the subordinate party into a "doormat" for the stronger party [Ref.28:p. 158-159].

A remarkable discussion of strategy and one which provides a marked contrast to the strategies previously cited is contained in the classic text on warfare, *The Art*

of War [Ref. 29]. Sun Tzu in his chapter titled *Offensive Strategy*, offers five strategies for ensuring victory in battle [Ref. 29:pp. 82-83]:

(1) He who knows when he can fight and when he cannot will be victorious.

(2) He who understands how to use both large and small forces will be victorious.

(3) He whose ranks are united in purpose will be victorious.

(4) He who is prudent and lies in wait for an enemy who is not, will be victorious.

(5) He whose generals are able and not interfered with by the sovereign will be victorious.

Those with bargaining and negotiating experience may readily associate Sun Tzu's strategies with similar purchasing strategies or approaches. The statement, "He who is prudent and lies in wait for an enemy who is not, will be victorious," suggests that a strategy that emphasizes patience will be successful. Analogously, the statement, "He whose ranks are united in purpose will be victorious," suggests that commitment is an important element to consider when formulating strategy. Consider as well the strategy reflected in Sun Tzu's statement that, "He whose generals are able and not interfered with by the sovereign will be victorious." This statement brings to mind the unfair price case discussed by Higgs (Ref. 4), wherein an Army Colonel used a pressure tactic in an attempt to influence the decision of a contracting officer who balked at buying

communications equipment at a price which he felt was unfair and unreasonable. Whether or not the Colonel's interference in the Higg's case was a determining factor in the contracting officer's decision, or if the contracting officer's decision in that case was right or wrong, it is remarkable that Sun Tzu's 2,500 year old thesis on war and strategy can be applied to current day contracting scenarios, such as the ethics dilemma proposed by Higgs.

### **C. A MODEL APPROACH TO BARGAINING POWER**

A significant body of bargaining theorists, including Pen, Zeuthen, Bacharach and Lawler, Friedman, etc., hold that there are factors or elements beyond those which can be stated in purely economic terms that can affect the bargaining process and influence the bargaining outcome. These elements include bargaining skill, the degree of dependence between the bargaining parties, the parties' perception of risk, time and aspirations. To define these bargaining elements and provide a framework for understanding how these elements affect the bargaining process, the researcher developed a general model of bargaining designated, *A Model for the Determinants of Bargaining Power and Bargaining Outcomes*.

The primary purpose of the model is to provide a framework for understanding potential bargaining tactics in

a general bargaining environment and for understanding the context of bargaining within the CONSTELLATION procurement scenario. What bargaining tactics could a Government contract specialist consider in the circumstance related in the CONSTELLATION procurement scenario, to counter an initial unfair or unreasonable offer from a sole source offeror? A few examples of possible tactics are threatening to curtail future business with the vendor, suggesting that another source of supply might be available, appealing to the vendor's patriotism, and appealing to the vendor's superior. Which approach should one use, or attempt to use? Each of these tactics has a motive or purpose and understanding the situational elements or dispute characteristics that exist in the CONSTELLATION procurement scenario and are common to many bargaining scenarios, may help answer this question. It may be helpful for instance, to consider the interests of the parties, the relationship between the buyer and seller, the commitment of the parties, possible alternatives, time constraints and each party's perception of risk. These elements are key factors for formulating bargaining tactics in the *Model for the Determinants of Bargaining Power and Bargaining Outcomes*.

The *Model for the Determinants of Bargaining Power and Bargaining Outcomes* is a synthesis of the six types of bargaining power described by Ralph Liebhaver in the



Contract Pricing Reference Guide, Volume V [Ref. 11], and the seven elements of conflict espoused by Fisher, Kopelmann and Schneider in *Beyond Machiavelli, Tools for Coping with Conflict* [Ref. 30]. Seven primary elements of bargaining are proposed as determinants of bargaining power and form a foundation for the model: information, alternatives, bargaining skill, the buyer and seller relationship, time, interests and risk.

Bacharach and Lawler's general theory of bargaining complements the model by providing a ready definition for the role that bargaining tactics play with respect to the acquisition of bargaining information, bargaining power and the relationship between bargaining power and the bargaining outcome in the model [Ref. 5: p. 46]. The model is illustrated in Figure 1.

The model embraces Bacharach and Lawler's approach to bargaining as a "dynamic interplay between power and tactics." [Ref. 5: p. 40] Tactics within the model play three critical roles: (1) tactics are the vehicle through which information is solicited, interpreted and applied; (2) tactics are the means of expressing bargaining power: real, implied or potential; and (3) tactics are the means of applying bargaining power towards the attainment of a specific bargaining outcome, or a range of bargaining outcomes.

## A Model for the Determinants of Bargaining Power and Bargaining Outcomes

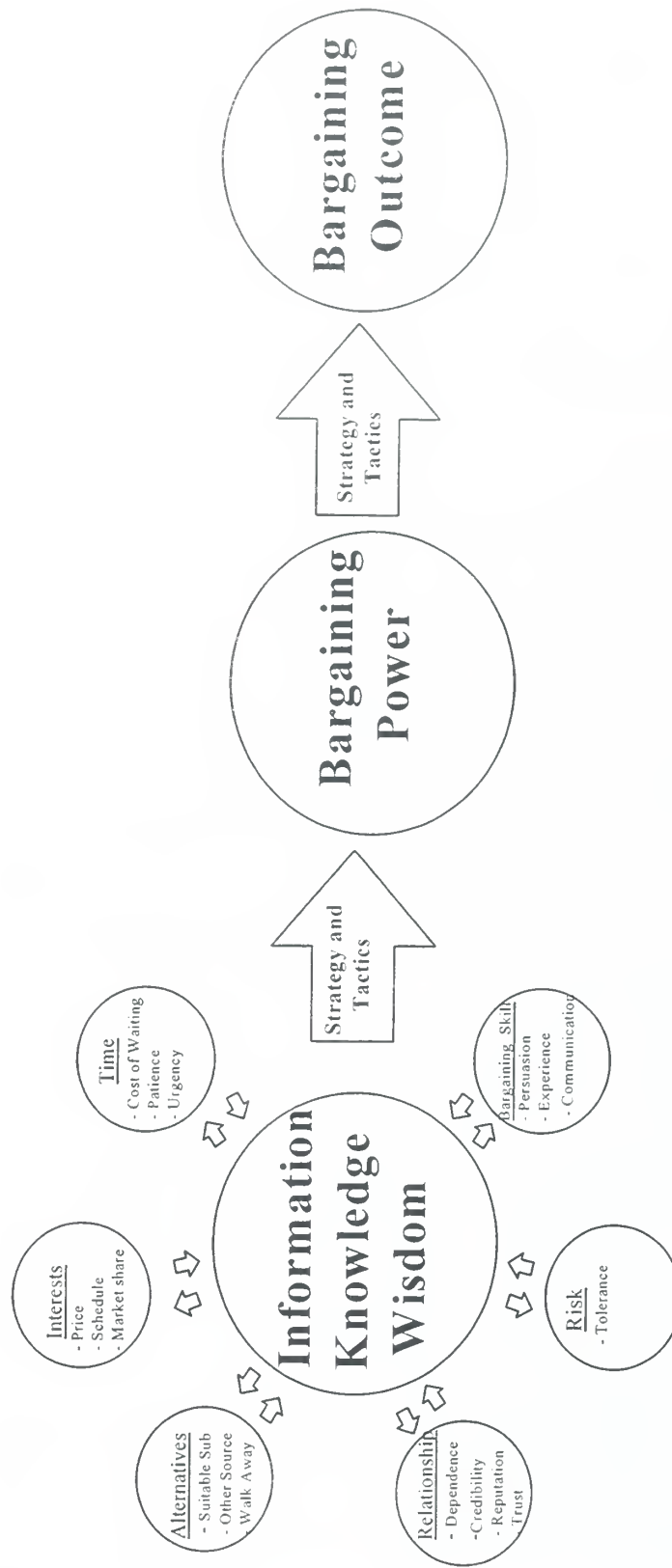


Figure 1. Source: Developed by researcher .

Bargaining power forms the "pivotal construct" within the model, as exemplified in Bacharach and Lawler's approach [Ref. 5: p. 47], with tactics acting as links between the determinants of bargaining power, the realization of bargaining power and ultimately, the bargaining outcome [Ref. 5: p. 47]. Bargaining power within the model is viewed in close consonance with Pen's definition of economic power [Ref. 15: p. 30]:

Economics is the science of scarcity; scarcity gives rise to the dependence of the subject on certain quantities of goods. If these goods are in the hands of a seller who cannot be perfectly substituted by another seller, the buyer becomes dependent on the seller. The seller can exercise economic power by threatening to withhold the goods, that is to say, he is able to make the subject do things he would not have done otherwise. So economic power is controlled by two conditions: first, the dependence of the buyer who is to be subordinated to the seller; and second, a possibility for the supplier to withhold his offer, or more precisely, the buyer's belief right or wrong, that this possibility exists.

Thus, dependence in the buyer-seller relationship is a necessary precursor of bargaining power.

Realization of each party's bargaining strengths and weaknesses is essential to maximizing bargaining power [Ref. 11: p. 3-12]. *Information* thus forms the overarching, or central bargaining determinant within the model, linking the other primary bargaining determinants. Information leads directly to knowledge of the other party's bargaining alternatives, bargaining skills, interests, perception of risk, valuation of time and the relationship between the two

parties. Assessing the strengths and weaknesses that the other party holds for these elements through fact-finding and preparation forms a foundation for building a bargaining advantage and a basis for formulating bargaining tactics and strategy. In essence, information translates directly into bargaining power.

*Alternatives* are the options each bargaining party has to bargaining [Ref. 30: p. 77]. *Alternatives* may include walking away from the deal, seeking or attaining the product or service sought from another source, or purchasing a suitable substitute item.

The element of *time* as a model element can be defined as a measurement of the cost of waiting to conclude the bargaining agreement [Ref. 11: p. 3-13]. Patience, persistence, urgency and endurance are model sub-elements which are defined within the model as a function of *time*.

The *relationship* between bargaining parties describes the parties' associations, linkages and commonalities [Ref. 30: p. 78]. The *relationship* is the assimilation of the bargaining parties' shared perceptions. Relationships may be founded on prior business dealings or formulated in the present. Trust, credibility, legitimacy, and reputation, are sub-elements of the bargaining *relationship*. The level of congruence, or similarity, functions as a measurement of

the level of cooperation within the bargaining *relationship*.

*Interests* are defined within the model as the requirements or needs of the prospective parties with respect to the proposed bargain [Ref. 30: p. 74]. Price, cost, schedule or performance objectives are examples of a buyer's bargaining *interests*. Seller *interests* include profit, market share and future business opportunities. Values, goals and priorities are sub-elements and are used to measure and compare the respective party's *interests*. Values may include patriotism, good citizenship or religious values. Goals may be economic or non-economic. A seller for instance, may consider economic goals such as profit, salary or stock options; a promotion or added prestige within a person's work organization are examples of non-economic goals.

*Risk* measures the uncertainties surrounding the potential bargain as well as the parties' *risk* tolerance [Ref. 11: p. 3-14]. *Risk* is used within the model to gauge the willingness of the bargaining parties to gamble bargaining interests in order to gain additional concessions.

*Bargaining skill* is defined within the model as the bargaining participants' ability to assimilate and apply the elements of information, relationship and interests towards

maximization of the bargaining outcome [Ref. 11: p. 3-13]. Alternatively, bargaining skill may be defined as the, "personal capacity of the bargainer to shift elements of the bargaining situation in his favor" [Ref. 15: p. 39]. Experience, persuasion, and communication are sub-elements of *bargaining skill* in the model approach.

Bargaining tactics are the linking mechanism that connects the determinants of bargaining to the assertion of bargaining power [Ref. 5: p. 47]. In other words, the application of bargaining tactics leads to a realization or understanding of bargaining power. A single tactic or combination of tactics forms a bargaining strategy or approach. Application of bargaining tactics as a function of bargaining power lead to the bargaining outcome.

The elements and sub-elements presented within the model are not meant to be comprehensive or cover every possible bargaining situation. For the same reasons that every possible bargaining strategy and tactic cannot be addressed in this chapter, neither can every possible determinant in a strategic bargaining encounter be addressed in the model. Pen makes use of a similar limitation in describing his general model of bargaining when he states, "Because all social phenomena are to a certain degree interdependent, all phenomena are, intrinsically, determining factors in the outcome of the bargaining process." [Ref. 15: p. 27] The model should however, if it



correctly serves its purpose, illuminate the bargaining positions of the parties in the procurement scenario, the potential choices for bargaining strategies or approaches that each party might consider, as well as the advantages and disadvantages of these potential strategies.

#### D. SUMMARY

This chapter began with the an overview of bargaining strategy and tactics. Bargaining tactics are the means through which strategic goals and objectives are accomplished. Bargaining strategy is a plan for the attainment of bargaining goals or objectives. Bargaining strategy is implemented through bargaining tactics. Various tactics and strategies were presented to illustrate the range of potential tactics and strategies which might be applied in a given bargaining scenario.

The latter portion of the chapter presented a general model of the bargaining process. The model views bargaining outcomes as a function of bargaining power, which in turn, is dependent on a number of possible determinants of bargaining power. The determinants of bargaining power proposed were information, alternatives, bargaining skill, the buyer and seller relationship, time, interests and risk.

Bargaining tactics are key to the model approach. Tactics are the vehicle through which information is solicited, interpreted and applied, the means of expressing bargaining power and the means of applying bargaining power

towards the attainment of a specific bargaining outcome, or a range of bargaining outcomes. Bargaining tactics thus connect the determinants of bargaining power to the formation of bargaining power and ultimately, to bargaining outcomes.

The *Model for the Determinants of Bargaining Power and Bargaining Outcomes* suggests that each bargainer's choice of tactics should follow one of three broad approaches: (1) to solicit, interpret or apply information; (2) express bargaining power: real, implied or potential; or, (3) apply bargaining power towards the attainment of a specific bargaining outcome, or a range of bargaining outcomes. Information may take the form of any one of the elements or sub-elements which make up the determinants of bargaining power. An analysis of how these tactics may be applied in the bargaining process and how the model fits the approaches used by Government procurement specialists in the specific case of the CONSTELLATION procurement scenario will be addressed in the next two chapters.



## IV. SURVEY RESULTS

### A. GENERAL

This chapter presents the results of a survey of 62 Department of Defense contracting specialists. The purpose of the survey was to determine and assess what types of tactics, strategies and general bargaining approaches DoD contracting specialists have used in the past, and would use in the future when faced with a situation similar to the CONSTELLATION procurement scenario.

The information presented in this chapter is arranged in the order in which it appears in the survey. Demographic information is presented first. A statistical presentation of the responses given to the five primary survey questions makes up the middle portion of the chapter. The latter portion of the chapter presents the results of the bargaining preferences portion of the survey. Readers can find a complete version of the survey in the Appendix.

### B. DEMOGRAPHIC INFORMATION

A total of 11 questions were included in the demographics section of the survey. The questions were oriented towards establishing an estimate of the relative experience and education of the survey population sampling. Age and gender were surveyed in order to seek possible correlations between other survey questions and these variables. Three of the 11 questions were optional:

Question 1, Name; Question 6, Command, and Question 8, E-mail address.

The following paragraphs summarize the demographic information portion of the survey. Some questions contain less than 62 responses due to non-response or multiple responses to the question.

The first question reviewed by the researcher was the question of age. Fifty-seven participants in the survey answered this question. The results are summarized in Table 1. The cumulative response to this question broken

DEMOGRAPHICS QUESTION 2: AGE								
<u>20-25</u>	<u>26-30</u>	<u>31-35</u>	<u>36-40</u>	<u>41-45</u>	<u>46-50</u>	<u>50-55</u>	<u>56-60</u>	<u>61+</u>
8	7	15	10	6	5	0	4	2

Table 1. Source: Developed by researcher.

down by percentage is portrayed graphically in Figure 2.

Question 3 asked the survey participants their gender. Fifty-nine survey participants answered this question.

Table 2 summarizes the answers received:

DEMOGRAPHICS QUESTION 3: GENDER	
<u>Male</u>	<u>Female</u>
25	34

Table 2. Source: Developed by researcher.

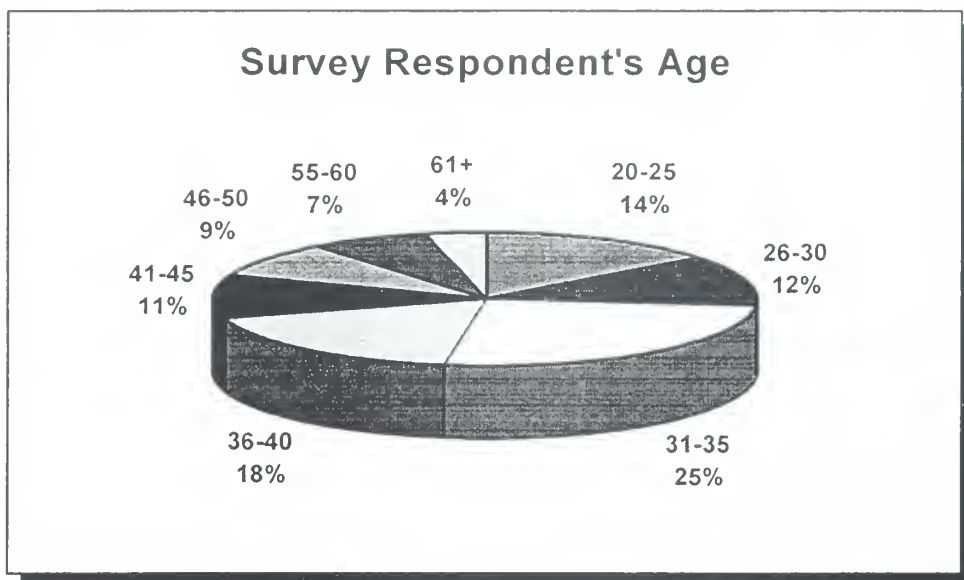


Figure 2. Source: Developed by researcher.

Figure 3 shows graphically the percentages of male and the other survey questions. The survey participant's rank or pay grade was also requested in order to determine if a correlation might be drawn between pay grade and any of the

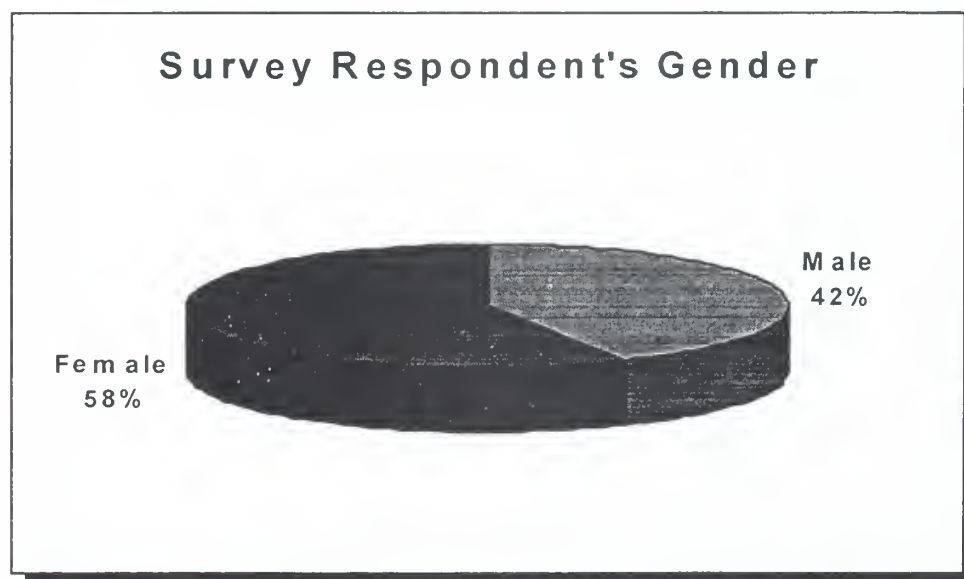


Figure 3. Source: Developed by researcher.



other survey questions. Fifty-seven of those who answered the survey responded to this question, the results of which are summarized in Table 3. Over one-third of the respondents held a pay grade of GS-09 or higher. The largest group of respondents came from the GS-07 group, which accounted for 20% of the total.

DEMOGRAPHICS QUESTION 4: RANK/PAY GRADE									
<u>E4</u>	<u>E5</u>	<u>E6</u>	<u>E7/8</u>	<u>GS6</u>	<u>GS7</u>	<u>GS9</u>	<u>GS11</u>	<u>GS13</u>	<u>O5</u>
2	6	4	2	9	13	4	6	10	1

Table 3. Source: Developed by researcher.

Twenty-seven percent of the respondent's were military and 73% were civilian. These figures are illustrated graphically in Figure 4.

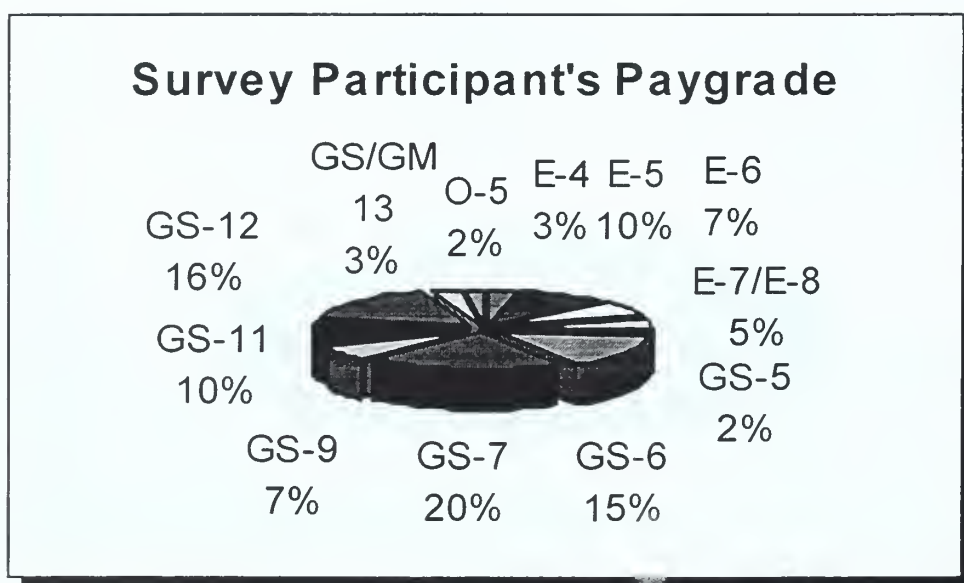


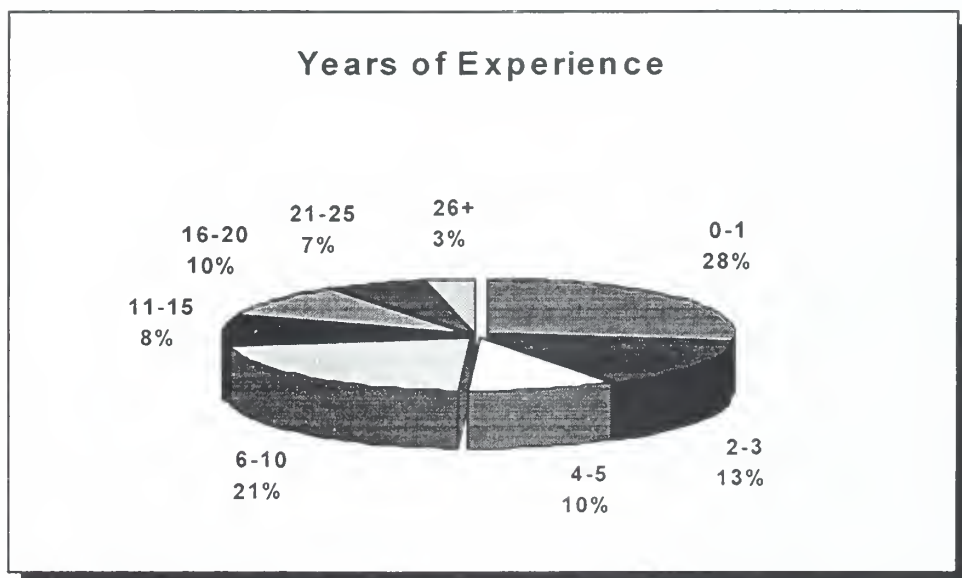
Figure 4. Source: Developed by researcher.

The number of years of Government contracting experience was also asked of the survey participants. The response is shown in Table 4. Forty-nine percent of the survey group reported at least six years Government contracting experience. The single largest group of survey respondents, however, reported 1 year or less experience.

DEMOGRAPHICS QUESTION 9: GOVERNMENT CONTRACTING EXPERIENCE							
<u>0-1</u>	<u>2-3</u>	<u>4-5</u>	<u>6-10</u>	<u>11-15</u>	<u>16-20</u>	<u>21-25</u>	<u>26+</u>
17	8	6	13	5	6	4	2

**Table 4.** Source: Developed by researcher.

This 0-1 years experience group made up 28% of the total survey sample size. These results are illustrated graphically in Figure 5.



**Figure 5.** Source: Developed by researcher.

Education was one additional piece of demographic information which the researcher felt might be useful in assessing the survey data. Table 5 lists the results received from demographics Question 10. One hundred percent

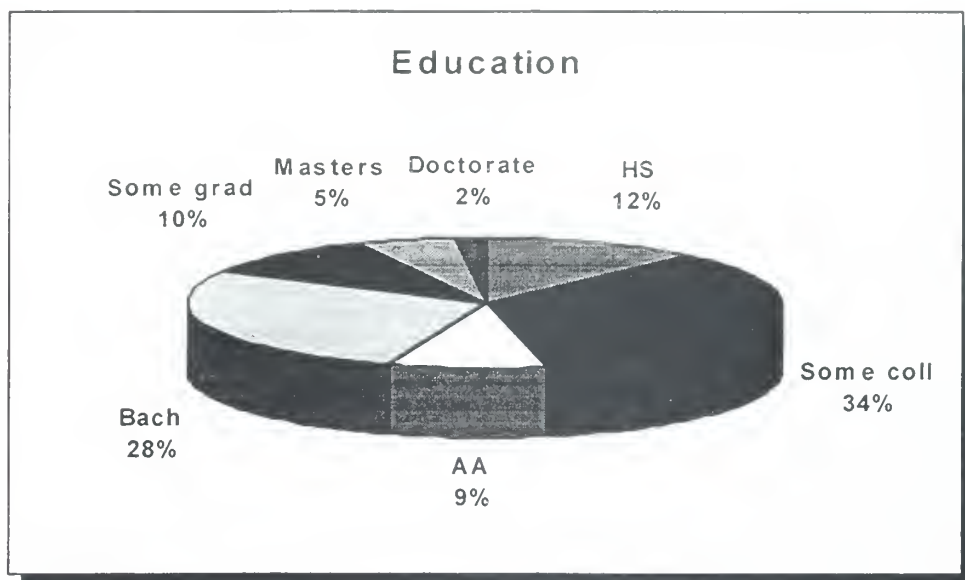
DEMOGRAPHICS QUESTION 10: EDUCATION	
<u>Level of Education Attained</u>	<u>Responses</u>
Some High School	0
High School Diploma (or GED)	7
Some College	20
Associate's Degree	5
Bachelor's Degree	16
Some Graduate Level Courses	6
Master's Degree	3
Doctorate Degree	1

**Table 5. Source: Developed by researcher.**

of the survey participants held a high school diploma or equivalent. Forty-five percent reported a bachelor's degree or higher. A graphical illustration of the survey respondents' answers to demographics Question 10 can be found in Figure 6.

### **C. SURVEY QUESTIONS**

The following questions made up the central portion of the survey questionnaire, Part III. The purpose of these questions was three-fold: (1) to ascertain the extent to which Government procurement specialists had been faced with



**Figure 6.** Source: Developed by researcher.

the type of procurement dilemma posed in the CONSTELLATION procurement scenario (Part II of the Questionnaire), (2) gauge how Government contracting specialists perceived a "take-it-or-leave-it" offer, and (3), to consider the bargaining strategy and tactics that the survey participants would use to resolve the bargaining impasse presented in the bargaining scenario.

#### **1.a. Survey Question 1**

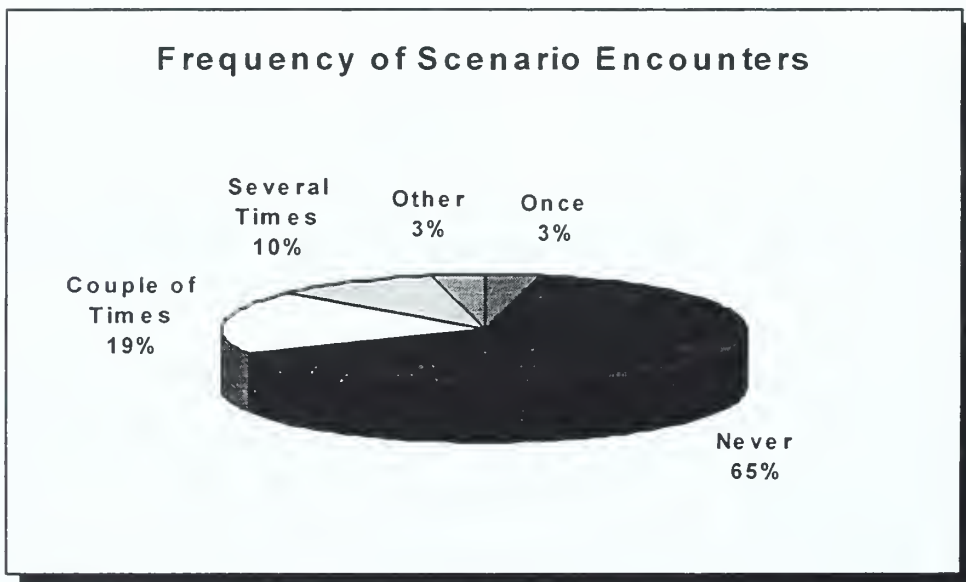
Have you ever had to buy goods and services under conditions similar to the USS CONSTELLATION procurement scenario?

#### **b. Responses**

- a. Yes, once: 2.
- b. No, never: 38.
- c. Yes, a couple of times: 11.
- d. Yes, several times: 6.
- e. Yes, at least one occasion per month: 0.

f. Other: 2.

The purpose of Question 1 was to assess the degree to which the survey participants had faced a situation similar to that portrayed in the CONSTELLATION procurement scenario. The respondents' answers to this question may be viewed graphically in Figure 7. Twenty-one out of the 57 participants who answered this question, or 35%, answered in the affirmative. Two fill-in responses, indicating an affirmative response were received. One fill-in response



**Figure 7.** Source: Developed by researcher.

was, "lots of times," while the other respondent using the fill-in option answered by stating, "Yes, but only under the Small Purchase Threshold."

#### **2.a. Survey Question 2**

Rank the following elements according to their importance to resolving the bargaining impasse with San

Diego Valve and Industrial (SDVI). (Rank your top ten choices. Rank your most important element with a "1" and your least important element with a "10".)

**b. Responses**

SURVEY QUESTION 2 RESULTS						
<u>Answer</u>	<u>Freq</u>	<u>Mean</u>	<u>Median</u>	<u>Mode</u>	<u>Std Dev</u>	<u>Range</u>
a. Your credibility	25	7.19	9	10	3.04	1-10
b. Buyer/seller relationship	36	5.64	6	6	2.44	1-10
c. Communication effectiveness	52	5.20	5	5	2.23	1-9
d. Alternatives	39	5.26	5	7	2.67	1-10
e. Understanding Govt interests	43	4.51	4	3	2.77	1-10
f. Understanding seller interests	30	7.40	8	9	2.48	2-10
g. Building a relationship	40	6.53	7	10	2.91	1-10
h. Finding a middle ground	48	5.60	6	8	2.80	1-10
i. Objective bargaining	31	6.74	7	8	2.08	1-10
j. Arguing the price is unreasonable	20	7.40	7	8	1.39	5-10
k. Knowing what you are buying	50	3.54	2	2	2.58	1-10
l. Commitment to a fair and reasonable price	50	3.78	3	1	2.78	1-10
m. Time available	47	4.37	4	4	2.75	1-10
n. Effort exerted	29	6.30	6	4	2.62	1-10

**Table 6. Source: Developed by researcher.**

Fourteen possible answers and one fill-in-the-blank option were offered under this question. Each of the 14 elements



is identified in Table 6, along with a number of key descriptive statistics. The answers to Question 2 were ranked on a scale of 1-10 with "1" representing the highest ranking; the mean scores should be interpreted accordingly. Answer 2c, "Your effectiveness as a communicator," was cited most frequently as a factor. Answers 2k, "Knowing what you are buying," and 2l, "Your commitment to ensuring the Government receives a fair and reasonable price," received the highest mean scores, with relative mean rankings of 3.54 and 3.78, respectively. Figure 8 graphically portrays the mean and frequency for the answers received to Question 2.

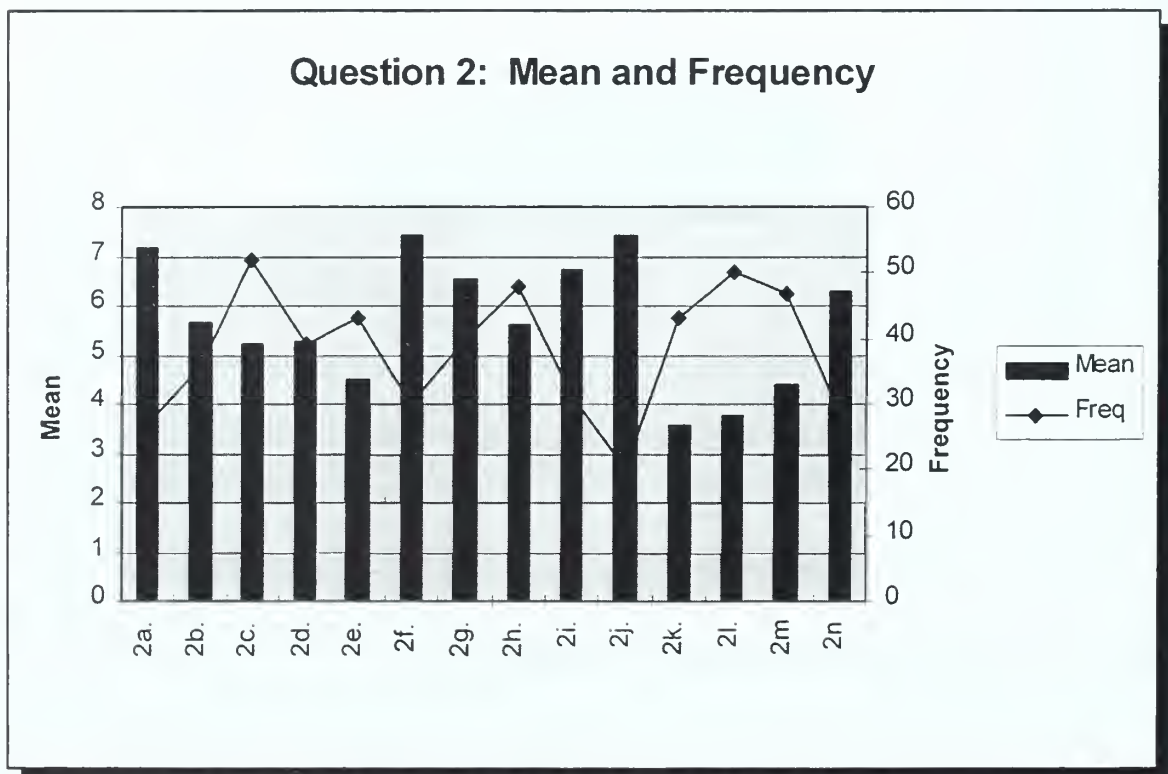


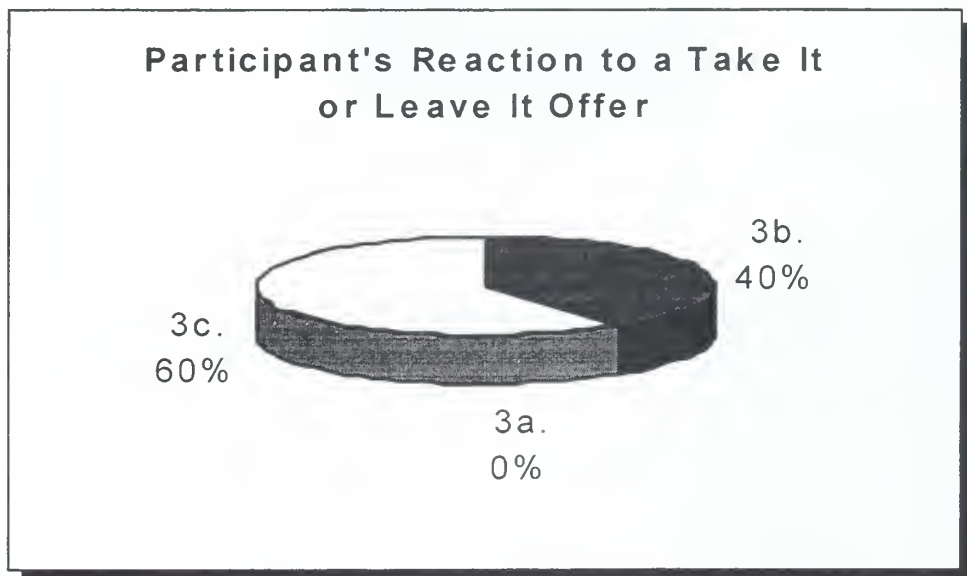
Figure 8. Source: Developed by researcher.

Survey questions 3 and 4 were included within the survey to establish a basis for how the survey participants viewed a take it or leave it offer. The responses received for each question are summarized in Tables 7 and 8 and are portrayed graphically in Figures 9 and 10.

QUESTION 3: A TAKE IT OR LEAVE IT OFFER FROM A SOLE SOURCE OF SUPPLY IS	
<u>Answer</u>	<u>Responses</u>
a. Always the final word.	0
b. Almost always the final word.	21
c. The final word over one half of the time.	31

**Table 7. Source: Developed by researcher.**

Sixty percent of the survey participants chose answer



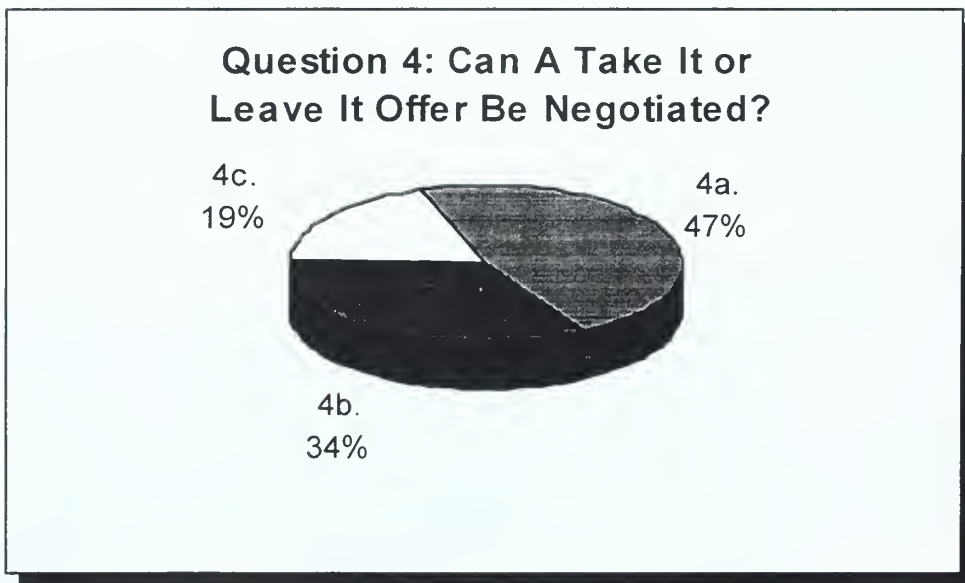
**Figure 9. Source: Developed by researcher.**

3c, "final word over one half the time", for Question 3.

QUESTION 4: A TAKE IT OR LEAVE IT OFFER FROM A SOLE SOURCE OF SUPPLY CAN	
<u>Answer</u>	<u>Responses</u>
a. occasionally be negotiated	25
b. can usually be negotiated.	18
c. can almost always be negotiated.	10

**Table 8.** Source: Developed by researcher.

Forty-seven percent chose answer 4a, "can occasionally be negotiated," for Question 4.



**Figure 10.** Source: Developed by researcher.

### **3.a. Survey Question 5**

Survey Question 5 was designed to ascertain what types of bargaining tactics or strategies the survey participants

would consider under the CONSTELLATION procurement scenario. Eighteen distinct strategies or tactics were offered, as well as a fill-in the blank option for writing in any strategy or tactic not listed. The question and answer choices are restated below:

Which bargaining strategies or tactics have you used in the past, or would attempt to use in the future to resolve the bargaining impasse with San Diego Valve and Industrial (SDVI), assuming that it was not possible to find another source of supply? (Please rank your top ten choices in each category.)

- a. Appeal to seller's patriotism.
- b. Implicitly notify the seller that future Government business for his firm may be sharply curtailed unless he bargains in good faith.
- c. Tell the seller in no uncertain terms that future Government business for his firm may be sharply curtailed unless he bargains in good faith.
- d. Tell the seller that you need his help in order to determine that the offered price is fair and reasonable.
- e. Threaten to bypass the seller's representative you are dealing with and appeal for a fair and reasonable price to his boss.
- f. Use probing questions (e.g., How did the seller arrive at the price he is asking for the part) in order to test the firmness of the seller's position.
- g. Inform the seller of possible alternatives to buying the part from the seller (e.g., possibly repairing the valve).
- h. Lie to the seller by informing him that you have another source of supply.
- i. Tell the seller that you plan to bring in higher management to assist you.
- j. Make a low ball counter-offer.
- k. Make a counter-offer explaining the amount offered is all you have.
- l. Explain that the seller's price is much higher than what you expect the part should cost and ask for a cost breakdown.
- m. "Walk away" from the seller's offer, with the hope that you can resume bargaining on better terms later on.
- n. Offer the sole source a letter contract.

- o. Tell the seller, "You have got to do better than that!"
- p. Tell the seller that a new design for the part you wish to buy from him is "In the works."
- q. Tell the seller that his position has angered your boss.
- r. Patiently wait for the seller to offer a better deal.
- s. Other bargaining approaches you would use or have used in the past.

## b. Responses

Twenty of 57 survey participants failed to rank the choices given to answer Question 5. The respondents instead checked off their choices without indicating any answer preference. Figure 11 shows the Question 5 answer data without taking into account any ranking or answer

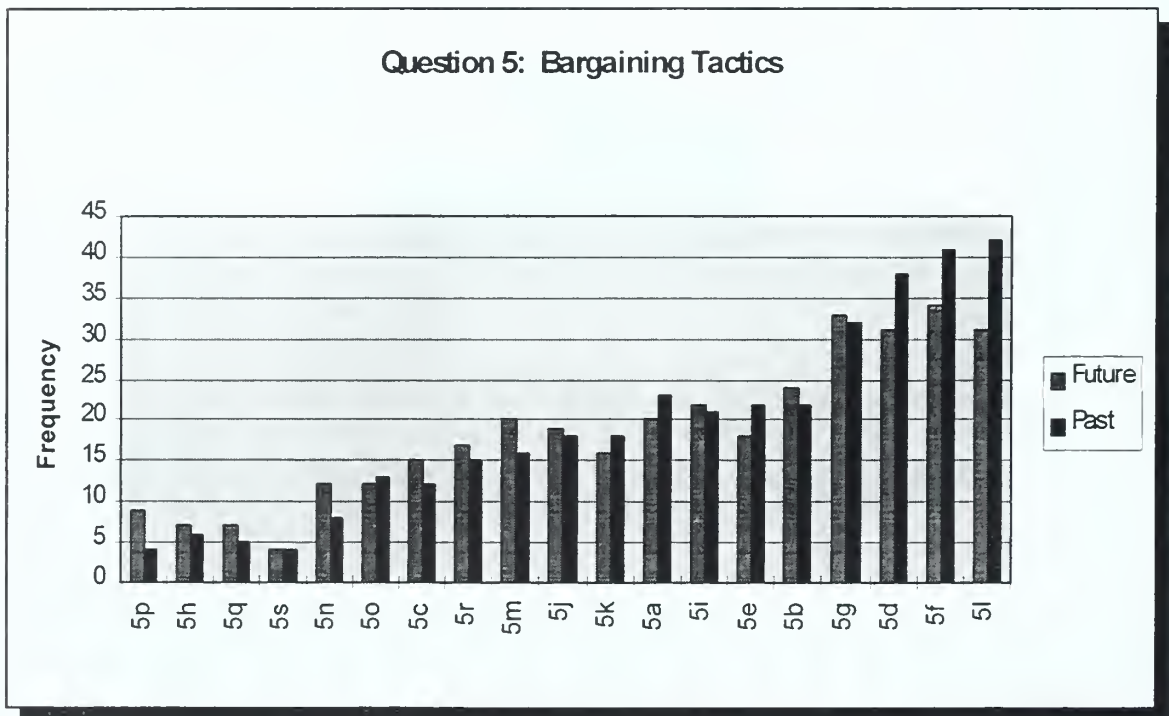


Figure 11. Source: Developed by researcher.

preference. Figure 12 shows the mean and frequency results for the group of 37 participants that ranked their preferred choices. In both cases, four choices were found to have the highest frequencies: (1) tactic 5d, "Tell the seller you need his help in order to determine that the price is fair and reasonable," (2) tactic 5f, "Use probing questions (e.g., How did the seller arrive at the price he is asking for the part) in order to test the firmness of the seller's position," (3) tactic 5g, "Inform the seller of possible alternatives to buying the part from the seller (e.g., possibly repairing the valve)," and (4), tactic 5l "Explain

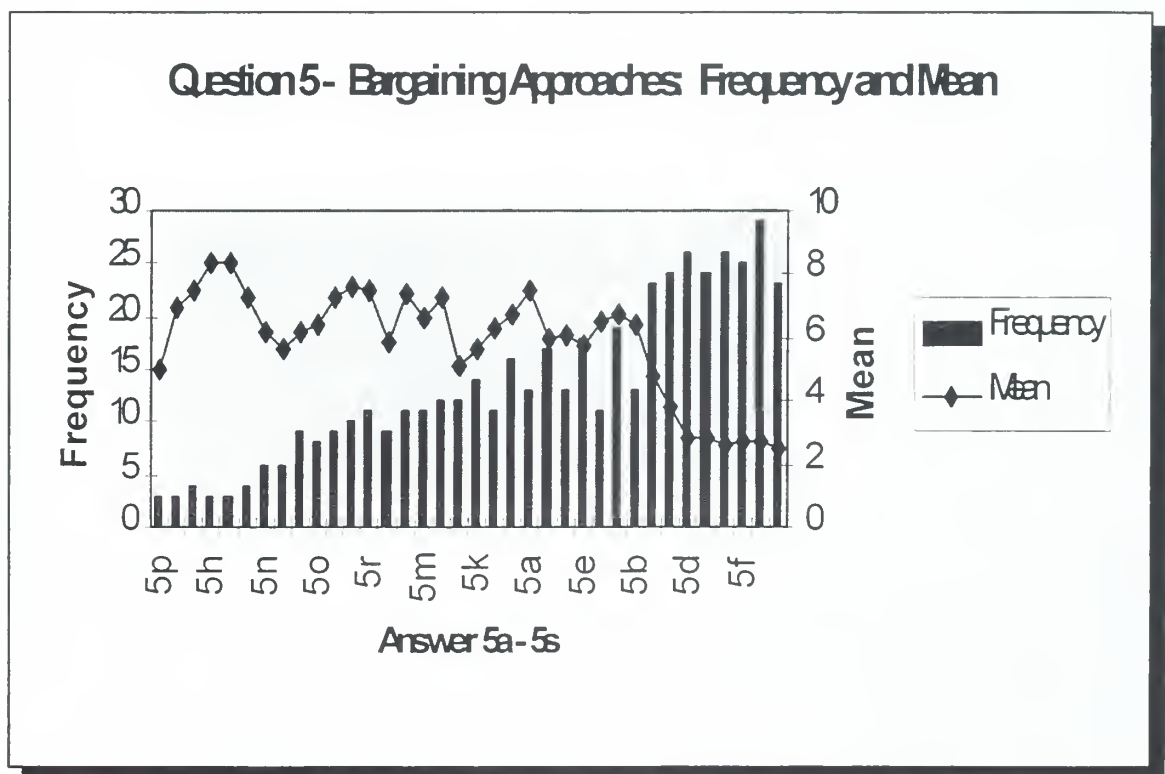


Figure 12. Source: Developed by researcher.

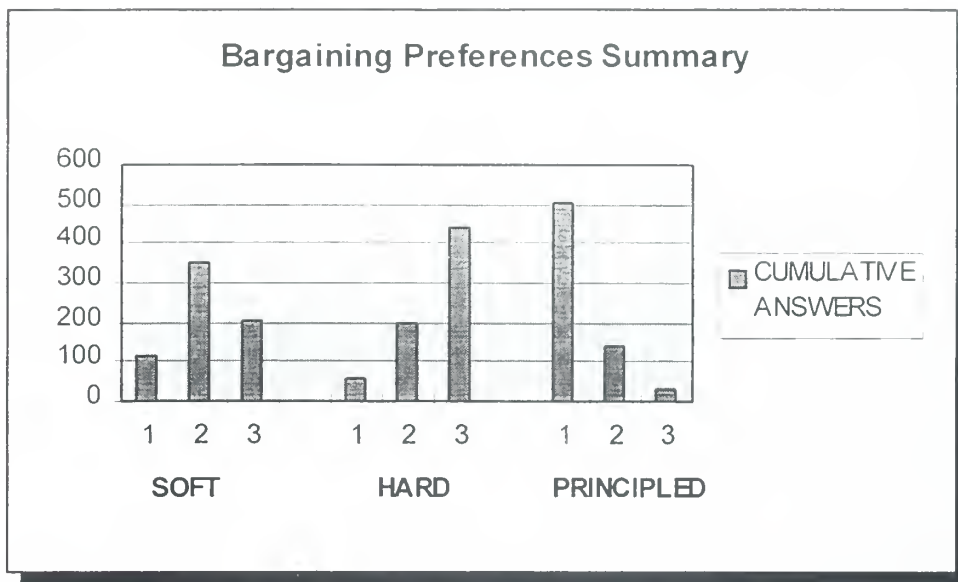


that the seller's price is much higher than what you expect the part should cost and ask for a cost breakdown." These the answers chosen by the 37 survey participants that ranked their answers.

#### **D. BARGAINING PREFERENCES**

Part V of the research survey entitled, "Bargaining Preferences" was included to assess the survey participant's preference for one of three general bargaining approaches. The respondents were asked to rate three bargaining approaches, (1) a principled, or interested-based approach, (2) a "Hard" position-based approach, and (3), a "Soft" position-based approach. This portion of the survey was adapted from Fisher and Ury's *Getting to Yes* [Ref. 31: p. 13].

Survey participants were asked to rank each set of bargaining approaches by placing a "1" next to their most preferred response, a "2" next to their second preferred response and a "3" next to their least preferred response. Thirteen sets of responses were offered to the survey participants consisting of three bargaining approaches, one principled, one hard-position based and one soft-position based. The primary responses received to each question are listed in Table 9. Table 9 is illustrated graphically as Figure 13.



**Figure 13.** Source: Developed by researcher.

The principled approach was clearly the preferred first choice among the survey participants. Seventy-five percent of the survey participants' first choice responses reflected the principled bargaining approach, eight percent of first choice answers reflected a hard position approach and 17 percent reflected a soft position approach. Figure 14 shows the cumulative preferences for the six possible primary and secondary choice combinations. The first column, P/S, represents choosing the answer reflecting a principled approach first, and the answer reflecting a soft-position approach second. P/H represents the selection of a principled approach as first choice and hard-position approach as second choice, and so forth. Three answer combinations made up 90 percent of the responses: the

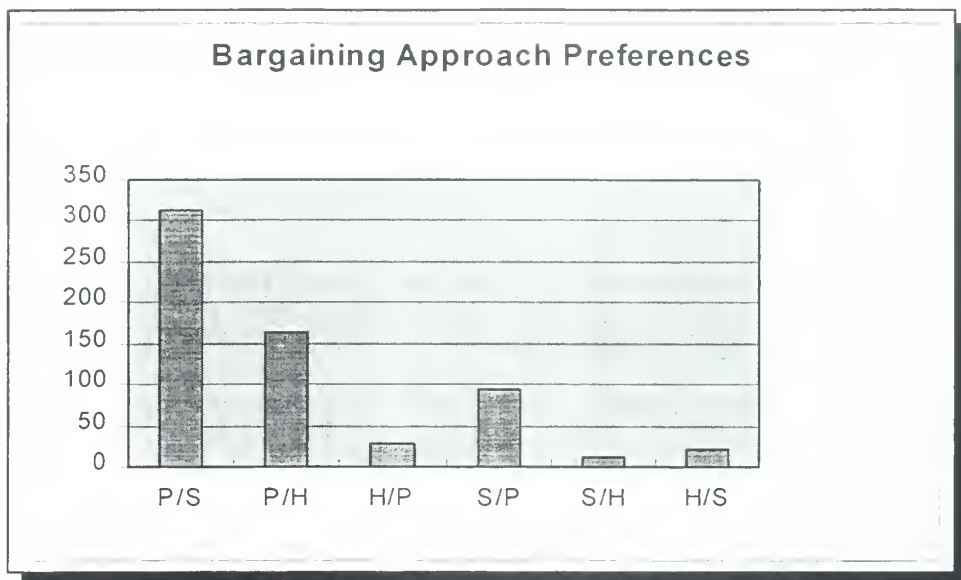
PRIMARY RESPONSES TO BARGAINING PREFERENCES SURVEY			
QUESTION	PRINCIPLED	HARD- POSITION	SOFT- POSITION
a. Participation	45	4	0
b. Goals	32	5	12
c. Relationship	36	5	17
d. Problem-Solving	44	7	2
e. Trust	29	2	21
f. Position	38	11	3
g. Approach	30	1	21
h. Bottom-Line	32	3	13
i. Concessions	49	3	3
j. Answers	41	5	0
k. Insist on	32	1	12
l. Will/Conviction	44	1	0
m. Yield to	49	3	0
Totals:	507	55	116

**Table 9. Source: Developed by researcher.**

principled/soft position combination accounted for 49 percent of the answer combinations, followed by principled/hard position with 26 percent and the soft position/principled combination with 15 percent.

#### **E. SUMMARY**

This chapter presented a summary of the results obtained from surveys of 62 DoD contracting specialists located in contracting offices throughout the United States. The demographics portion of the survey results show that 58



**Figure 14.** Source: Developed by researcher.

percent of the participants were female. The median age bracket for the participants was 31 to 35 years of age. Seventy-three percent of the participants were civil service employees and 27 percent were military officer or enlisted personnel. The median years of experience bracket for the survey respondents was 4-5 years.

Part III of the survey was comprised of five questions designed to evaluate the survey participant's experience with a purchasing scenario similar to the CONSTELLATION purchasing scenario and to evaluate what types of bargaining strategy, tactics and approaches the survey participants would use in that type of scenario. In response to survey Question 1, 35 percent of the participants indicated that they had been involved in a purchasing scenario similar to

percent indicated no experience with a scenario like the CONSTELLATION scenario.

Question 2 asked the survey participants to rank 14 elements of bargaining on a scale of 1-10. The four elements with the highest mean rankings were "Knowing what you are buying," with a mean score of 3.54, "Your commitment to ensuring the Government receives a fair and reasonable price," with a mean score of 3.78, "The amount of time available for you to solve the problem," with a mean of 4.37 and "Your understanding of the Government's interests," with a mean score of 4.51.

Questions 3 and 4 were included to evaluate the survey respondent's perceptions with respect to a take-it-or-leave-it offer from a sole source of supply. Sixty percent of the participants felt that a take-it-or-leave-it offer from a sole source was the final word over one half of the time. Forty-seven percent of the respondents indicated that a take-it-or-leave-it offer from a sole source of supply could occasionally be negotiated. Thirty-four percent felt a take-it-or-leave-it offer from a sole source of supply could usually be negotiated, and 19 percent of the respondents felt that a take-it-or-leave-it offer from a sole source of supply could almost always be negotiated.

Question 5 asked the survey respondents to rank a series of bargaining strategies and tactics. The most frequently cited strategy or tactic was "Explain the

seller's price is much higher than what you expect the part should cost and request a cost breakdown," followed by, "Use probing questions in order to test the firmness of the seller's position." These two answers also received the highest mean rankings.

The last portion of the survey asked the survey participants to rank 13 sets of choices that reflected one of three bargaining approaches: (1) principled, (2) hard position, and (3) soft position. Seventy-five percent of the responses indicated a primary preference for a principled approach. Seventeen percent of the responses indicated a soft position approach as a first choice and eight percent of the responses indicated a hard position approach.





## V. ANALYSIS

### A. GENERAL

The focus of this chapter is to analyze the principal and secondary thesis questions in light of the theoretical framework established in Chapter II, the general model of bargaining proposed in Chapter III and the results of the survey discussed in Chapter IV. Analysis of four of the six principal survey questions forms the basis for this chapter, with the objective of drawing inferences which can be applied to the CONSTELLATION procurement scenario.

Question 1 of the survey was evaluated to test the hypothesis of whether procurement situations like the CONSTELLATION scenario actually occur within the Department of Defense. Question 2 was analyzed to determine what bargaining elements might be important in a procurement scenario like the CONSTELLATION scenario. Question 5 was evaluated to learn what strategies and tactics might be effective in purchasing scenarios like the CONSTELLATION scenario.

The data obtained from the bargaining preferences portion of the survey were analyzed to ascertain what type of bargaining approach is preferred, or is most likely to be used by a Government procurement specialist. This portion of the analysis should assist an evaluation of what

bargaining approach should be taken by Government buyers in cases like the CONSTELLATION procurement case.

## **B. THE MODEL AND THE CONSTELLATION SCENARIO**

Analyzing the CONSTELLATION scenario in light of the Model of the Determinants of Bargaining Power and Bargaining Outcomes is a useful first step in the analysis process. Discussion of the primary determinants of bargaining power associated with the model, namely, alternatives, interests, the buyer-seller relationship, bargaining skill, time, risk, and the overarching determinant of information, and their relationship to the CONSTELLATION case will help to further define the bargaining scenario.

First, consider *Alternatives*. The Government buyer is apparently given no acceptable alternative other than to buy the parts from San Diego Valve and Industrial (SDVI), if he is to acquire the parts on time. No other suppliers are known to exist, and the possibility of finding a suitable substitute for the parts appears remote. Manufacturing two replacement valves is an unacceptable alternative due to the limited time involved. Repairing the valves, even temporarily, might be a possible *alternative*, but the feasibility of this *alternative* is not known without further information.

Next, consider the *buyer-seller relationship*. The

Government buyer is clearly placed in a position where he is highly dependent on the seller, due to the sole source nature and urgency of the requirement. A lack of trust on the part of the buyer appears to be present. Prior business dealings and the seller's reputation are not mentioned, and therefore cannot be considered. It would however, be prudent to consider these factors if more information surrounding these elements were known.

The take-it-or-leave-it approach taken by the seller, SDVI, implies a degree of coldness. The seller refuses to engage in communication which would enhance the buyer's ability to complete the bargain. This approach also suggests the seller holds a bargaining advantage. As stated in Blair, Kaiserman and Romano's analysis, a credible take-it-or-leave-it offer by a seller in the case of supplier domination leaves the buyer with no other choice but to accept the offer [Ref. 18:p. 839]. In the CONSTELLATION scenario however, if the buyer accepts the seller's offer as initially stated, the buyer violates his fiduciary duty to the Government by failing to ensure a fair and reasonable price. There may be a legitimate purpose for SDVI's take-it-or-leave-it approach other than to simply exert bargaining power and a bargaining outcome favorable to the seller [Ref. 9:p. 217-219]. SDVI might actually be pricing

the valves in accordance with a fair and reasonable pricing policy [Ref. 9:p. 217-219]. SDVI might also be unwilling to provide further information such as cost or pricing information for fear that such information might leak to competitors and damage its position in the market [Ref. 9:p. 217-219]. Without further information however, it is not possible to assess these possibilities.

The impact of the buyer and seller's *bargaining skills* are indeterminate in the procurement scenario. No bargaining, beyond the presentation of the seller's initial offer, has taken place. Whether the introduction of the buyer and seller's *bargaining skills* would actually have an impact on the bargaining outcome is an issue where the theory of bargaining is not in agreement.

The *Model of the Determinants of Bargaining Power and Bargaining Outcomes* suggests that, all other factors being equal, that the bargaining party with superior *bargaining skill* holds a bargaining advantage which could be exploited to enhance the party's bargaining position and bargaining power. For instance, it would certainly enhance the Government buyer's position if he could use an advantage in *bargaining skills* to convince SDVI to reveal enough information for the buyer to make a fair and reasonable price determination.

An appeal to SDVI's *interests* might be an effective bargaining strategy for the Government buyer to use. A private enterprise such as SDVI normally considers profit a primary *interest*. However, SDVI may have other *interests* which may or may not fully agree with the immediate profit interest involved with the sale of the valves. SDVI may have an *interest* in future business with the Government. SDVI may also have *interests* in maintaining its reputation and the goodwill of its name. There are certainly many more *interests* that might be attributable to SDVI in the CONSTELLATION case.

A buyer who realizes that SDVI has other *interests* and that they may not be 100 percent in concert with the take-it-or-leave-it approach offered in the CONSTELLATION scenario possesses a useful bargaining tool with which to apply bargaining leverage. One tactic available to the buyer for instance, is to counter the take-it-or-leave-it position of SDVI by asserting that such an approach or offer would curtail future business with the Government. The success or failure of such a tactic may be influenced by the other bargaining determinants in the model, including the parties' perception of *risk*, and the *time* available to complete the bargain.

*Time* is a bargaining determinant which appears to weigh

heavily against the buyer. The cost of delay in completing the procurement beyond the time allowed, while indefinite, appears to be large. *Time* limits the ability of the buyer to gather and assimilate information and the number of practical alternatives. Limited *time* may also limit the Government buyer's ability to assert any advantage in bargaining skill, if such an advantage were to exist.

*Time* may also play a factor in the seller's approach to the procurement. Whether the seller knows that the valves are urgently required is not known from the scenario. If the seller does hold that information, it is certainly the type of information that could be used to create bargaining power and reinforce the seller's initial offer. *Time* could also work to the disadvantage of SDVI. SDVI might need an immediate infusion of cash to pay off creditors for example, and thus might not be able to wait out a patient Government buyer. Additional information related to the *time* element would clarify what impact this element would have on the bargaining process.

The element of *risk* is certainly present in the procurement scenario, yet difficult to evaluate. The buyer is certainly faced with considerable *risk*. The buyer must consider both the *risk* of not securing the parts on time, as well as the *risk* of purchasing the parts at a price which is



unfair or unreasonable. The buyer's level of *risk* tolerance, or willingness to *risk* conflict, may affect the buyer's decision making process on multiple levels including the buyer's perceptions of the advantages and disadvantages of not accepting the seller's offer [Ref. 15:p. 32]. The seller's perception of *risk* is an unknown and may only come to light through the application of an effective combination of bargaining strategy and tactics. Once more, it would be to the buyer's advantage to direct his bargaining approach towards discovering more *information* related to this primary model determinant. *Information* related to the seller's perception of *risk* could expose a weakness which could be used to further the Government buyer's bargaining position.

When viewed in light of the CONSTELLATION scenario, *Information* appears to be a common requirement when assessing the other model bargaining determinants. *Information*, in fact, does encompass the other bargaining determinants of *time*, *bargaining skill*, *risk*, the *buyer-seller relationship*, *alternatives* and *interests*, since the level of information each party holds with respect to these bargaining elements affects how these elements affect the bargaining process. The selection of appropriate strategy and tactics for the purpose of exploiting any primary bargaining determinant and creating potential bargaining

power [Ref. 5:p. 179] is thus inextricably linked to gathering, assimilating, or using *information*.

### C. BARGAINING THEORY AND THE CONSTELLATION SCENARIO

The previous discussions on bargaining theory have enhanced the analysis so far, and additional comparisons here between theory and the hypothetical case scenario may enhance our understanding of the results obtained from the survey data.

In the CONSTELLATION scenario, the Government is not concerned with a profit, but with a fair and reasonable price. The work of Edgeworth, Bowley and others states that under bilateral monopoly conditions, a contract curve representing a range of possible prices may be established. The upper bound of the contract curve is determined by the maximum price which the buyer is willing to accept. In the Bowley case, this price is the price that equals the buyer's marginal revenue for the quantity traded. For the CONSTELLATION case, this upper boundary limit can be substituted with the highest price that the buyer would determine to be fair and reasonable. At any point above this price, the buyer is ethically and legally bound to refuse the offer, regardless of the circumstances of the customer or end user. Certainly the buyer could violate the fair and reasonable price requirement, but if the buyer did so, the buyer would summarily, be acquiescing to the demands of the seller. By making this assumption then, we assume

the solution to the question of price, and the principal and other subsidiary questions addressed in this research become moot.

The lower limit of the contract curve may be viewed as the seller's marginal costs associated with the valve. From the viewpoint of the work of Bowley and subsequent analysis by Blair, Kaiserman and Romano, as well as others, it is implicit or explicit that profit will act as a primary motivating force in the seller's pricing decision. Thus, the seller would not sell the valves at any price less than the marginal costs incurred. If Pen's work were interjected here, numerous other factors could be added to the basic formula. It is sufficient for this analysis however, to use Bowley's work, while keeping in mind that other factors accounted for by Pen's opheimity functions could also influence the seller's pricing strategy.

The seller in the CONSTELLATION scenario is clearly in a dominant position. Given the urgency of need for items being procured and potential costs to the Government if the purchase is delayed, there can be little doubt that the buyer would accept any price so long as that price was fair and reasonable. Following Bowley's analysis then for the case where a dominant monopolist sells to a price-taking monopsonist, the price solution for the CONSTELLATION case can be found at the highest point on the contract curve. In other words, the highest possible price that a buyer would

conclude to be fair and reasonable.

Without adequate information however, there is no way for either the buyer to determine what the seller's costs are, or the seller to determine what the highest price the buyer would consider fair and reasonable. Thus, bargaining must take place to determine what price will result.

The theory and analyses discussed in Chapter II and the *Model of the Determinants of Bargaining Power and Bargaining Outcomes* suggest that certain elements of bargaining may be effective in moving the participants towards a bargaining agreement. Our analysis of the answers obtained from the survey of Government contracting personnel will continue with these elements in mind.

#### **D. ANALYSIS OF THE PRINCIPAL SURVEY QUESTIONS**

Survey Question 1 asked survey participants if they had ever had to buy goods and services under conditions similar to the USS CONSTELLATION procurement scenario. Twenty-one participants out of 59, or 35 percent, answered with an affirmative response. Of those answering the question in the affirmative, 18, or 85 percent of the respondents indicated that they had experienced this sort of buying situation on more than one occasion. Out of 17 survey respondents reporting 11 or more years of Government contracting experience, ten respondents, or 59 percent, reported having experienced a similar situation at least

once.

The results obtained in response to Question 1 thus support the researcher's hypothesis that procurement situations paralleling the CONSTELLATION scenario are experienced by Government contract specialists working within the DoD. The data also suggest that the probability of such an experience happening appears to increase with the number of years of experience on the job.

Survey Question 2 asked the survey participants to rank 14 separate bargaining elements on a scale of one to ten with one being the highest rank on the scale. The cumulative survey results revealed five bargaining elements with mean scores significantly lower than the sample mean of 5.42. These answer choices also had scores at or near the top five scores for median, mode and frequency, suggesting a preference for these elements within the survey group. These elements were evaluated using a Z statistic test to determine whether the answers were statistically significant.

The five elements with the lowest mean scores (and therefore, highest ranking), were: (1) answer 2k, "Knowing what you are buying," with a mean score of 3.54, (2) answer 2l, "Your commitment to ensuring the Government receives a fair and reasonable price," with a mean of 3.78, (3) answer

2m, "The amount of time available to you to resolve the problem," with a mean score of 4.37, (4) answer 2e "Your understanding of the Government's interests, with a mean score of 4.51, and (5), answer 2c, "Your effectiveness as a communicator," with a mean of 5.20.

The five elements of bargaining most frequently selected by the survey group were (1) answer 2c, "Your effectiveness as a communicator," with a frequency of 52; (2) answer 2l, with a frequency of 50; (3) answer 2h, "Finding a middle ground or compromise between you and the seller that provides for mutual gain," with a frequency of 48; (4) answer 2m with a frequency of 47; and (5), answers 2k, and 2e, which both had a frequency of 43. The rankings of these answers are summarized in Table 10.

Top Ranked Answers for Question 2			
Answer	Mode	Mean	Frequency
2l. Commitment to a fair and reasonable price.	1	2	2
2k. Knowing what you are buying.	2	1	5
2e. Understanding the Government's interests.	3	4	5
2m. The amount of time available.	4	3	4
2n. The amount of effort you exert to resolve the problem.	4	1	11
2c. Your effectiveness as a communicator.	5	5	1
2h. Finding a middle ground.	9	7	3

**Table 10. Source: Developed by researcher.**

In order to test whether the difference in mean ranking scores for answers 2l, 2k, 2e, 2m and 2c were statistically significant, the a statistical test using the Z test statistic was developed. The results of the test are summarized in Table 11.

Null Hypothesis:

$$H_0: \mu > \mu_0$$

The observed mean for answers 2l, 2k, 2e, 2m and 2c is less than the sample mean.

Alternative Hypothesis:

$$H_a: \mu \leq \mu_0$$

The sample mean is greater than or equal to the observed mean for samples 2l, 2k, 2e, 2m and 2c.

$$\text{Decision rule: Reject } H_0 \text{ if } \frac{\bar{X} - \mu_0}{\sigma/\sqrt{n}} < Z\alpha$$

$$\text{Significance level } \alpha = .01$$

$$\text{Sample size } n = 55$$

$$Z_{.01} = 2.33$$

Decision:

Reject the null hypothesis for answer 2c. Do not reject the null hypothesis for answers 2k, 2l, 2m or 2e.

Interpretation:

The mean scores for answers 2k, 2l, 2m and 2e are lower than the sample mean, suggesting that these bargaining elements were considered more important by the survey



Z Test Statistic Results for Question 2		
Answer	Z Value	P Value
2c. Effectiveness as a communicator.	.7804	.23
2k. Knowing what you are buying.	5.098	less than .00001
2l. Commitment to a fair and reasonable price.	4.474	less than .00001
2m. The amount of time available.	2.939	.0017
2e. Understanding the Government's interests.	2.575	.005

**Table 11. Source: Developed by researcher.**

respondents in cases similar to the CONSTELLATION procurement scenario.

This interpretation however, cannot be made for answer 2c. A preference for answer 2c cannot be determined based on the test statistic. The fact that this answer had the highest frequency and a relatively low standard deviation of 2.23 however, leads one to believe that this answer was considered to be of medium importance within the survey group. This conclusion is also supported by the fact that the relationship between mean and frequency for the answers obtained in Question two had a high negative correlation of  $-.8011$ . Z statistic tests were performed on the other answer choices for Question 2 and no other answers were found to be statistically less than the sample mean.

The bargaining elements determined to be statistically significant in Question 2 may be analyzed in terms of the bargaining theories presented in Chapter II and *The Model of the Determinants of Bargaining Power and Bargaining Outcomes*. Each answer viewed as significant by the survey group carries within it elements of important bargaining strategies and tactics. The answers may also correlate to the theories of bargaining discussed in Chapter II.

Answer 2l, "Your commitment to ensuring the Government receives a fair and reasonable price," reflects the importance perceived by the survey respondents in holding a high aspiration level [Ref. 19:p. 61] for obtaining a fair and reasonable price. The strategy of maintaining a high level of commitment reflects determination, resolve and steadfastness. Commitment implies a low rate of concession [Ref. 19:p. 90]. Siegel and Fouraker's research found that if a bargainer has a low rate of concession, it often leads to a lowering of his opponent's aspirations [Ref. 19:p. 70]. In the CONSTELLATION case, it seems reasonable to believe that an unwavering commitment on the part of the Government buyer might move the seller to lowering his profit aspiration, which in turn might lead to an offer of a more reasonable price.

Answer 2k, "Knowing what you are buying," reflects the

importance of knowledge and information, in this case knowledge of the part to be procured. The Government buyer appears to lack sufficient information with which to complete the purchase of the valves. Knowledge and information about the valves is crucial to determining whether the price offered is fair and reasonable. Analyses discussed in Chapter II which concluded that price under a bilateral monopoly scenario was determinant all found it necessary to assume at a minimum that knowledge of the supplier's cost function and buyer's demand functions were known to both parties.

It should be apparent that if the Government buyer in the CONSTELLATION case had access to information regarding the seller's costs for the valves, then the buyer could readily determine if the price offered was fair and reasonable. Without adequate information however, the buyer in the CONSTELLATION case cannot determine if the price is fair and reasonable. This conclusion is fully supported by the theory, and one added piece of analysis should clarify this conclusion for the skeptical reader.

As one of the most critical elements in the CONSTELLATION scenario, the question of what is a fair and reasonable price merits detailed analysis. The analysis is problematic in the CONSTELLATION case however, because the

buyer appears to lack the information needed to complete a satisfactory cost or price analysis. One approach suggested by one of the readers of this research was to analyze the question based on the original acquisition price, the number of years since the part was originally manufactured, the offered price and the rate of return achieved.

The number of years elapsed since the original parts were manufactured is not stated in the procurement scenario. It is stated however, that the manufacturer went out of business twenty years ago. Assuming the valves were twenty years old, the annual rate of return (ROR) required for a \$1,500 (the original unit cost for the valve) investment to reach a value of \$45,000 (the offered price for one unit) can be solved using the following formula:

$$\$1,500 \times (1 + \text{ROR})^{20} = \$45,000$$

$$\text{ROR} = .1853$$

Rates of return can likewise be computed for other time periods, as illustrated in Table 12.

The rate of return approach leaves the researcher with two problems to resolve: one easily reconciled, the other intractable. A fair and reasonable rate of return can easily be determined for a given period of time. One approach for instance, might be based on the rates of return offered for Treasury bills during the same time period, with

Rates of Return and Number of Years Required for a \$1,500 Investment to Appreciate to \$45,000	
Rate of Return (%)	Number of Years
3000	1
447.72	2
97.43	5
40.51	10
18.53	20
12.00	30
8.87	40
7.04	50

**Table 12. Source: Developed by researcher.**

premiums added in for inflation, storage costs and business risk. Two problems that cannot be readily resolved using the rate of return approach are determining the number of years to use to calculate the rate of return and the initial acquisition cost. Assuming that the part originally cost the seller \$1,500 and that he held the part for 30 years, a twelve percent rate of return and \$45,000 unit cost might be considered fair and reasonable. An eighteen percent rate of return might arguably be considered to be fair and reasonable if the part cost the seller \$1,500 and he held the part for twenty years. "Fair and reasonable" after all is an imprecise and relative term that must be evaluated based on the specific elements of each purchasing scenario.

However, if the part had been bought at auction the year prior for \$200, then it is doubtful any reasonable and informed individual would consider a \$45,000 price offer to be considered fair or reasonable. Sufficient information then is a key to navigating the bargaining impasse posed in the CONSTELLATION scenario and determining what is a fair and reasonable price.

The Government buyer is placed at a considerable bargaining disadvantage by not knowing more about the part he is buying. The seller in turn, derives considerable bargaining advantage and significant potential bargaining power by not disclosing any cost or pricing information. The take-it-or-leave-it approach taken by the seller combined with what appears to be an unreasonably high priced offer, implies that the seller may know that the Government has a desperate need for the valves. A plausible approach for the Government buyer in this case may be to redouble his efforts to get the information he needs to determine if the price is a fair and reasonable one. Without adequate information, a fair and reasonable price determination is impossible. A sound recommendation for the Government buyer in the CONSTELLATION case would be to tailor his strategy, tactics and bargaining approach towards convincing the seller to give him the information he needs to make a fair

and reasonable price determination.

Answer 2e, "Your understanding of the Government's interests," reflects the importance of knowing and understanding what is at stake for the Government in this case. Two primary interests of the buyer should be evident: get the parts on time and at a fair and reasonable price. Getting the parts on time means meeting the customer's requirement, which should always be an interest for a Government buyer. An added interest closely related to the customer is avoiding potential costs caused by the delay. The costs of delay may be very large or they may be inconsequential. As we saw with the lack of information about the valves, lack of knowing what the actual costs of delay are places the buyer at a bargaining disadvantage. The buyer certainly would not be pressed for time if he knew that CONSTELLATION could either make do without the parts in the immediate future, or if there was another practical alternative. A useful bargaining strategy for the buyer then may involve fully researching what Government interests are involved in the case. This might include contacting the Supply Officer, Chief Engineer or Commanding Officer of the ship to get their perspective. Fully understanding the Government's interests in this case then, is clearly an important factor and a useful approach to the dilemma.



Answer 2m, "The amount of time available to you to resolve the problem," was also rated highly by the survey respondents and determined to be statistically significant. The limited amount of time available to the buyer in the CONSTELLATION case limits the alternatives available to the buyer. The opportunity to manufacture the valves or find other sources of supply is certainly curtailed by the lack of time available. Lack of time limits the buyer's ability to gather and assess information. The shortage of time may also limit the effectiveness of tactics and strategy such as patience, persuasion or commitment that a skilled bargainer might use to increase his bargaining power.

It would clearly be to the Government buyer's advantage to devise a way to extend the procurement deadline. The seller might be very surprised if the Government did not meet his initial price demand quickly. The risk element for the seller should be expected to increase as the amount of time, measured beginning with the initial offer, increases. Given that the factors that influence the formation of bargaining power will shift towards the bargaining advantage of the buyer with the increase in time, such as the possibility of finding or using other alternatives, the risk to the seller that the purchase may fall through increases. If the Government refused to conclude the buy and the

CONSTELLATION still got underway on time, it might move the seller to soften his position. If not on price, perhaps some other type of concession, such as offering additional information. The element of time then, is certainly an important element to consider in the CONSTELLATION scenario. Applying strategy and tactics to shift the bargaining advantage and bargaining power obtained through the element of time would certainly work to the benefit of the buyer.

The role that experience plays in determining what elements of bargaining are important in cases like the CONSTELLATION scenario was analyzed. Survey participants' responses were evaluated according to how highly they ranked the four statistically significant responses and how often they chose one of the statistically significant responses. The results obtained are summarized in Table 13.

Table 13 shows the percentage of respondents who ranked from one to four the statistically significant answers in Question two according to one of five experience categories and according to one of three rank ceilings. In the interpretation of the survey data, it is interesting to note that the three years or less experience category provided answer percentages for the four statistically significant responses equal to or greater than the four or more year experience category in eight of the nine comparisons. The

Experience as a Function of Choosing the Four Statistically Significant Responses to Question 2					
	Percentage of Statistically Significant Answers Ranked $\leq 5$				
Years of Experience	1 Answer	2 Answers	3 Answers	4 Answers	Total %
3 or less	.24	.36	.20	0	.88
4 or more	.22	.33	.20	0	.80
6 or more	.23	.40	.20	0	.83
11 or more	.18	.41	.18	0	.76
15 or more	.17	.50	.20	0	.92
	Percentage of Statistically Significant Answers Ranked $\leq 3$				
Years of Experience	1 Answer	2 Answers	3 Answers	4 Answers	Total %
3 or less	.40	.28	.12	0	.80
4 or more	.22	.40	.03	0	.69
6 or more	.23	.40	.03	0	.70
11 or more	.18	.35	.02	0	.59
15 or more	.17	.42	.08	0	.67
	Percentage of Statistically Significant Answers Ranked $\leq 2$				
Years of Experience	1 Answer	2 Answers	3 Answers	4 Answers	Total %
3 or less	.40	.32	0	0	.72
4 or more	.47	.19	0	0	.67
6 or more	.47	.20	0	0	.67
11 or more	.47	.12	0	0	.59
15 or more	.50	.167	0	0	.67

Table 13. Source: Developed by researcher.

three or less years of experience category also had a higher

percentage of respondents rank three of the four questions for each of the rank ceilings. In sum, while it cannot be concluded that a lack of experience played a role in choosing and ranking a statistically significant response, the numbers show that experience totaling four or more years was not a significant factor in choosing or ranking the four statistically significant responses to Question 2.

Survey Question 5 asked survey participants to rank the bargaining tactics or strategies that they have used in the past in cases similar to the CONSTELLATION case and the tactics or strategies they would use in the future. The survey results obtained in response to Question 5 indicated four preferred tactics. Those answers were (1) answer 5l, "Explain that the seller's price is much higher than what you expect the part should cost and ask for a cost breakdown," (2) answer 5f, "Use probing questions (e.g., How did the seller arrive at the price he is asking for the part) in order to test the firmness of the seller's position," (3) answer 5d, "Tell the seller that you need his help in order to determine that the offered price is fair and reasonable," and (4), answer 5g, "Inform the seller of possible alternatives to buying the part from the seller." The mean and frequency scores for these four tactics and their mean ranking relative to the other tactics proposed in

the question are summarized in Table 14.

Question 5: Mean and Frequency for the Four Most Preferred Tactics						
Would Use in the Future	Have Used in the Past	Answer	Raw Frequency (Ranked and unranked)	Frequency for Ranked Answers	Mean	Mean Rank
	X	5g	32	23	4.82	4
X		5g	33	24	3.85	4
	X	5d	38	26	2.88	3
X		5d	38	24	2.826	2
	X	5f	41	29	2.68	1
X		5f	38	25	2.833	3
	X	5l	42	29	2.75	2
X		5l	31	23	2.52	1

**Table 14.** Source: Developed by researcher.

In order to determine if the answers listed in Table 14 are statistically significant, a test of the means was devised in a manner similar to the test used for Question 2. The test will determine whether the mean scores for answers 5g, 5d, 5f and 5l are statistically significant. Because the sample size (n) was not very large, a student-t test was used to test the null hypothesis instead of the Z test used for Question 2.

Null Hypothesis:

$$H_0: \mu > \mu_0$$

The observed means for answers 5g, 5d, 5f and 5l are less than the sample mean.

Alternative Hypothesis:

$$H_a: \mu \leq \mu_0$$

The sample mean is greater than or equal to the observed mean for samples 5g, 5d, 5f and 5l.

Decision rule: Reject  $H_0$  if  $\frac{\bar{x} - \mu_0}{s/\sqrt{n}} < t_\alpha$

Significance level  $\alpha = .01$

Sample size  $n = 37$

Degrees of freedom =  $n-1$

$$t_{36,.01} = 2.433$$

Decision:

Reject the null hypothesis for answer 5g: "Inform the seller of possible alternatives (Have used in the past)".

Do not reject the null hypothesis for all other answers tested. Test results are summarized in Table 15.

Interpretation:

The mean scores for answer choices 5d, 5f, and 5l are clearly lower than the sample mean, suggesting that these bargaining tactics were considered more important in cases similar to the CONSTELLATION procurement scenario by the Government procurement specialists surveyed. Answer 5g

t Statistic Test Results for Question 5	
Answer	t Value
5g. Inform seller of possible alternatives. (Used in Past)	.8064
5g. Inform seller of possible alternatives. (Use in Future)	2.8164
5d. Tell seller you need his help to determine price is fair and reasonable. (Used in Past)	4.9260
5d. Tell seller you need his help to determine price is fair and reasonable. (Use in Future)	5.0428
5f. Use probing questions. (Used in Past)	5.3591
5f. Use probing questions. (Use in Future)	5.0270
5l. Ask for a cost breakdown. (Used in Past)	5.2076
5l. Ask for a cost breakdown. (Use in Future)	5.6998

**Table 15. Source: Developed by researcher.**

is statistically significant for "Would use in the future," but is not significant for the case "Have used in the past." Answer 5l, "Explain that the seller's price is much higher than what you would expect the part should cost and ask for a cost breakdown" had the highest mean ranking of the 19 possible answers in Question 5 for "Would use in the future," and was ranked second to answer 5f, "Use probing questions." Answer 5d, "Tell the seller you need his help," was ranked second for "Would use in the future" and third for have used in the past. The three mean scores are very close for these three answers, so close that there is no statistically significant difference between these three



answers. In other words, the survey participants preferred these three choices over the other 16 choices, but did not prefer any one of the three over the other two.

The significance of answers 5d, 5f and 5l reflects once again, the need for information. Each of these tactics can be interpreted as an effort on the part of the Government buyer's to gain additional information. These three answers also associate closely with answer 2k, "Knowing what you are buying," which carried the highest mean score for Question 2. The statistical significance of answers 5d, 5f and 5l also concurs with the bargaining theory discussed. Without adequate information, a fair and reasonable price determination appears impossible.

Answer 5g, "Inform the seller of possible alternatives to buying the part from the seller," proved to be statistically significant for the "Would use in the future" condition only. The importance of alternatives and the strategy of offering these types of alternatives to the seller have been previously discussed. If the buyer in the CONSTELLATION case had one or more credible alternatives, he could choose them over a bargain with SDVI. As implied in the survey answer, the buyer could also make use of potential alternatives as a bargaining tool. The possibility of credible alternatives does not necessarily

mean that the seller will alter his position. However, if it would be to the seller's advantage to alter his position in order to avoid a bargaining conflict and potentially lose the sale, it makes sense to conclude that a rational seller would take such action. Certainly the other bargaining elements of risk, buyer-seller relationship, bargaining skill, time and interests all have an impact on the what role and the importance of alternatives in a given procurement scenario. However, notwithstanding the influence of other bargaining elements, the ability to offer alternatives to a seller in a situation similar to the CONSTELLATION case was viewed as significant.

The role of experience was evaluated to determine if experienced contracting personnel would rank higher, or more frequently choose the four choices determined statistically significant in Question 5 than inexperienced contracting personnel. Table 16 shows the mean and frequency for the four statistically significant answers.

Three years of experience or less was considered inexperienced. In order to test whether a difference exists between the mean ranks assigned by experienced and inexperienced contracting personnel the following statistical test was formulated:

Null Hypothesis:

Question 5 Response: Experienced vs. Inexperienced Personnel				
Answer	Experienced		Inexperienced	
	Freq	Mean	Freq	Mean
5d. Tell seller you need his help (Used in past) .	18	3.16	8	2.12
5d. Tell seller you need his help (Use in future) .	13	2.53	11	3.09
5f. Use probing questions (Used in past) .	19	2.42	7	3.14
5f. Use probing questions (Use in future) .	18	2.57	11	3.00
5g. Inform seller of alternatives (Used in past) .	15	4.13	8	6.00
5g. Inform seller of alternatives (Use in future) .	11	3.82	13	3.14
5l. Ask for a cost breakdown (Used in past) .	20	2.53	9	2.44
5l. Ask for a cost breakdown (Use in future) .	11	3.00	12	2.12

Table 16. Source: Developed by researcher.

$$H_0: \mu_x - \mu_y = D_0$$

The difference between the means for experienced and inexperienced contracting personnel for the four

statistically significant choices is zero.

Alternative Hypothesis:

$$H_a: \mu_x - \mu_y > D_0$$

The mean rank for experienced contracting personnel is less than the mean rank for inexperienced contracting personnel.

$$\text{Decision rule: Reject } H_0 \text{ if } \frac{X - Y - D_0}{s \sqrt{\frac{n_x + n_y}{n_x n_y}}} > t$$

Significance level  $\alpha = .01$

Sample size  $n_x = 8, n_y = 8$

$$t_{8, .01} = 3.499$$

Result:

$$t \text{ statistic} = .468$$

Decision:

Do not reject the null hypothesis.

Interpretation:

There is insufficient evidence to conclude that there is a difference between the mean ranking of the answers given by experienced and inexperienced contracting personnel to answers 5d, 5f, 5g and 5l. In other words, there appears to be no difference between experienced and inexperienced contracting personnel in the way they ranked these four answers.

The test statistic shows that there is no overall

difference in the way experienced and inexperienced contracting personnel ranked these answer choices. However one answer choice of chosen by the group categorized as inexperienced stands out with a significant difference.

This is answer 5g, "Inform the seller of possible alternatives" for the category, "Have used in the past." This answer choice, with a mean ranking of 6.00, had a mean that was more than two standard deviations from the overall mean for the inexperienced personnel responses, which was 3.22. The large difference in the mean rankings for "Have used in the past," and "Would use in the future" for the responses given by inexperienced personnel suggests that inexperienced personnel had not used this tactic in the past, but felt it would be a worthwhile tactic to use in the future. It is also appears that the reason why this choice was not found to be statistically significant when tested for the entire survey sample was because inexperienced personnel on average, ranked this answer choice much higher for the "Have used in the past" category. While the mean responses for the 5g answer choice "Would use in the future" category are almost identical for experienced and inexperienced personnel, experienced personnel assigned a much lower average score to this response in the "Have used in the past" category. This suggests that experienced

personnel were more familiar with this tactic than inexperienced personnel.

#### **D. ANALYSIS OF BARGAINING APPROACHES**

A survey of bargaining approaches made up the latter portion of the survey. The overwhelming preference of those surveyed was to choose a principled or interest-based approach, over either a hard-position approach or a soft-position approach. The interest-based approach was clearly the preferred choice among the Government procurement specialists surveyed.

Though it should never be assumed that one type of approach is always correct for a given bargaining scenario, the potential advantages of using an interest-based approach in situations analogous to the CONSTELLATION scenario are apparent. An interest-based approach encourages two-way dialogue between the bargaining parties and the transfer of information. An interest-based approach also encourages the attainment of a middle ground which offers mutual gain.

An interest-based approach avoids the extreme positions of either the hard or soft-position approaches. A hard-position approach on the part of the buyer could limit the range of possible bargains to prices near the lower limit of the contract curve. Analogously, a soft-position approach would appear to allow the seller the opportunity to

push for a bargain closer to the upper limit of the contract curve. Intuitively, an interest-based approach would appear more likely to result in a signed contract and a contract which approaches the theoretical joint-profit maximizing solution.

A key question for analysis is whether a Government buyer's preferred approach is affected by the number of years of experience the buyer holds. In order to analyze this question, the researcher compared the answers provided by the survey participants with the number of years of contracting experience each participant acknowledged. Experienced personnel were once again considered to be any respondent with four or more years of experience. The percentage of respondents who gave an interest-based response to six or less of the 13 bargaining approach

<b>Interest-Based Answers as a Function of Experience</b>			
Years of Experience	Number Surveyed	% with 6 or less Interest-based responses	% with 11 or more Interest-based responses
3 or less	25	.16	.48
4 or more	36	.36	.31
6 or more	30	.40	.30
11 or more	17	.41	.29
16 or more	12	.50	.167

Table 17. Source: Developed by researcher.



questions was compared to those participants who responded with an interest-based answer 11 or more times. The results are summarized in Table 17.

The results are somewhat surprising but show that there was less of a preference among the survey participants for an interest-based approach as their experience increased. Figure 15 readily shows the weakening preference for an interest-based approach as experience increases.

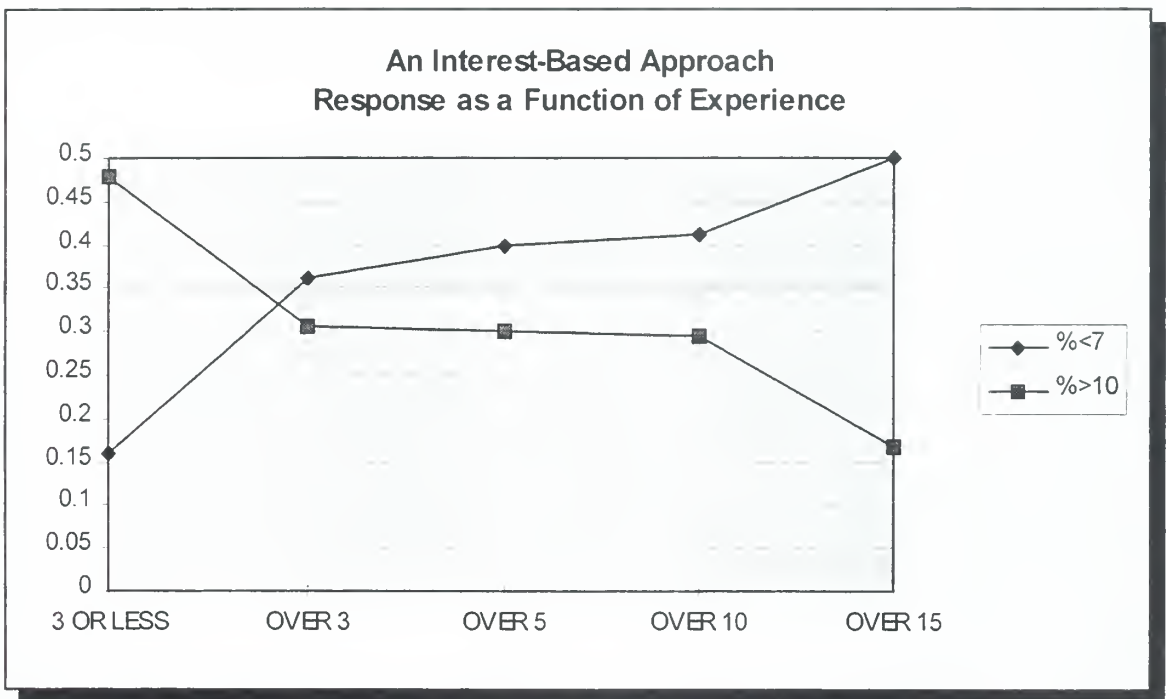


Figure 15. Source: Developed by researcher.

## F. SUMMARY

This chapter analyzed the survey results presented in

Chapter IV. Over one-third of the survey respondents indicated they had experienced a procurement situation similar to the CONSTELLATION scenario, supporting the assumption that such cases are more than isolated incidents.

Four of 14 bargaining elements offered as choices in survey Question 2 were found to be statistically significant. These were "Knowing what you are buying," "Your commitment to a fair and reasonable price," "The amount of time available," and "Understanding the Government's interests." These answers are supported by the bargaining theory and the *Model of the Determinants of Bargaining Power and Bargaining Outcomes*.

The frequency and mean rankings for the four statistically significant responses for Question 2 were compared for both experienced and inexperienced negotiators using three years of experience or less as a dividing point between experienced and inexperienced negotiators. The responses indicated no significant difference between experienced and inexperienced contracting personnel in the frequency or ranking of the four responses. In fact, in eight of nine comparisons for answer selection and rank combinations, percentages for experienced personnel were slightly lower than the percentages for inexperienced personnel.

Question 5 of the survey was analyzed to determine what strategy and tactics were preferred by the survey respondents. Three of 18 possible survey responses were found to be statistically significant for both the "Have used in the past case" and "Would use in the future case." Those three answers were: (1) "Tell the seller you need his help in order to determine if the price is fair and reasonable," (2) "Use probing questions," and (3) "Ask for a cost breakdown." "Informing the seller of possible alternatives" was found to be statistically significant for the "Would use in the future" case.

As with Question 2, the Question 5 responses of experienced and inexperienced contracting personnel were compared to see whether there was a difference in the way the two groups ranked the statistically significant answers. No difference was found for the seven statistically significant answer choices. However, a significant difference was noted in the response for answer 5g, "Inform the seller of possible alternatives" for the category "Have used in the past." This choice was found to vary significantly from the "Would use in the future" response given by inexperienced personnel for this answer choice as well as the mean response for this answer given by experienced personnel. Inexperienced personnel were less

likely to rank this answer highly for the category "Have used in the past" than experienced negotiators, suggesting that inexperienced contracting personnel were less familiar with this tactic.

The latter portion of the chapter was devoted to an analysis of the bargaining preferences portion of the survey. This portion of the survey was designed to evaluate which of three bargaining approaches, interest-based, hard position-based or soft position-based, the survey participants would prefer. An interest-based approach was the first choice of the respondents 75 percent of the time. It was also shown that contracting personnel were less likely to choose an interest-based approach as experience increased.

## VI. CONCLUSIONS AND RECOMMENDATIONS

### A. INTRODUCTION

This chapter presents conclusions based on the thesis research and analysis. The principal and subsidiary research recommendations will be discussed. Recommendations for further research are also presented.

### B. CONCLUSIONS

1. Four bargaining elements were considered important by Government contracting specialists in situations similar to the CONSTELLATION procurement scenario: (1) "Knowing what you are buying," (2) "Your commitment to ensuring the Government receives a fair and reasonable price," (3) "The amount of time available to you to resolve the problem," and (4) "Your understanding of the Government's interests." These elements were identified and discussed in Chapters IV and V.

2. There is no difference in the preference for the four bargaining elements determined to be statistically significant between inexperienced contracting personnel and experienced contracting personnel.

3. The bargaining strategy and tactics that Government contracting specialists used most frequently in the past to bargain in cases such as the CONSTELLATION procurement scenario were (1) "Explain that the seller's price is much

higher than what you expect the part should cost and ask for a cost breakdown," (2) "Use probing questions (e.g., How did the seller arrive at the price he is asking for the part.) in order to test the firmness of the seller's position," and (3) "Tell the seller that you need his help in order to determine that the offered price is fair and reasonable." These three strategies or tactics, along with, "Inform the seller of possible alternatives to buying the part from the seller" were strategy and tactics which Government contracting personnel would prefer to use in the future. These tactics were also identified and discussed in Chapters IV and V.

4. Inexperienced contracting personnel were less likely to have used the tactic, "Inform the seller of possible alternatives to buying the part from the seller" in the past than experienced personnel. However, for the responses found to be statistically significant, there was no difference between the preferences of inexperienced contracting personnel and experienced contracting personnel.

5. Government procurement specialists, when offered a choice of bargaining approaches, prefer a principled, or interest-based approach to bargaining, followed by a "soft position" approach. A hard position approach is overall, the least preferred approach of Government contracting

personnel.

6. Experienced contracting personnel are less likely to prefer an interest-based approach than inexperienced contracting personnel.

### **C. RECOMMENDATIONS**

1. Training for procurement and acquisition professionals should include a Government-contractor bilateral monopoly scenario similar to the CONSTELLATION scenario.

Contracting personnel should be aware of the bilateral monopoly case and its relationship to sole source procurement and acquisition. The bilateral monopoly case provides a unique perspective for understanding the process of bargaining and in particular, bargaining with a sole source. It is important that Government contracting personnel understand that bargaining advantage does not always rest with the sole source supplier. Likewise, Government contract specialists should also understand that bargaining techniques can and should be used to ensure the agreed upon purchase price is equitable.

2. The Federal Acquisition Regulation should be revised to include a definition of the term "fair and reasonable" as well as guidance for how to interpret and apply the definition.



While the Federal Acquisition Regulation suggests a number of methods for determining what a fair and reasonable price is, it does not define the term. The term is somewhat amorphous and imprecise and certainly the criteria of determination may vary somewhat from procurement to procurement. However, a definition of "fair and reasonable" along the lines of the definitions provided in the Contract Pricing Reference Guide would almost certainly assist a buyer when deciding price reasonableness. "Fair and reasonable" plays a key role in Government procurement and is too important not to be defined within the Federal Acquisition Regulation.

#### **D. ANSWERS TO RESEARCH QUESTIONS**

##### **1. PRIMARY RESEARCH QUESTION:**

What bargaining tactics and strategy might be effective in purchasing goods or services from a sole source offeror when the price is perceived as unfair or unreasonable?

The tactics or strategies preferred by Government contracting personnel in situations similar to the CONSTELLATION procurement scenario, a case where a sole source offers the Government a price suspected to be unfair or unreasonable are (1) "Explain that the seller's price is much higher than what you expect the part should cost and ask for a cost breakdown," (2) "Use probing questions (e.g., How did the seller arrive at the price he is asking for the

part.) in order to test the firmness of the seller's position," (3) "Tell the seller that you need his help in order to determine that the offered price is fair and reasonable," and (4) "Inform the seller of possible alternatives to buying the part from the seller."

## 2. SUBSIDIARY RESEARCH QUESTIONS:

### a) What is a "Fair and Reasonable" price?

"Fair and reasonable" lacks a concrete definition. The Federal Acquisition Regulation lacks a definition for this term. Thus, the term is open to some interpretation. The word "fair" suggests an exchange which is equitable and correct; "reasonable" may be interpreted as a descriptive term for an act that reflects prudence and wisdom.

There are two principal methods for evaluating price reasonableness: price analysis and cost analysis. In the normal course of Government business, these methods are more than adequate for evaluating what is and what is not a fair and reasonable price. Adequate information however, is essential for a buyer to successfully use either technique.

b) Are situations similar to the CONSTELLATION scenario experienced by Government contracting personnel? Based on survey results which showed over one-third of the respondents had experienced this type of scenario, the answer is yes.

c) Are there differences between experienced and inexperienced contracting personnel with respect to the

elements of bargaining they consider important in cases like the CONSTELLATION scenario? No difference was observed between the bargaining elements which experienced and inexperienced contracting personnel thought were important.

d) Are there differences between experienced and inexperienced contracting personnel with respect to the bargaining strategy and tactics they would use if confronted with a procurement situation like the one in the CONSTELLATION? Inexperienced contracting personnel were less familiar with the, "Inform the seller of possible alternatives to buying the part from the seller" tactic than experienced personnel. Experienced and inexperienced personnel were equally likely to choose the following three tactics (1) "Explain that the seller's price is much higher than what you expect the part should cost and ask for a cost breakdown," (2) "Use probing questions (e.g., How did the seller arrive at the price he is asking for the part.) in order to test the firmness of the seller's position," and (3), "Tell the seller that you need his help in order to determine that the offered price is fair and reasonable,"

e) What bargaining approaches are preferred by Government procurement personnel? Government procurement personnel overwhelmingly prefer an interest-based bargaining approach.

f) Is there any difference between the preferred

bargaining approaches of experienced and inexperienced contracting personnel? Experienced personnel are less likely to prefer an interest-based approach than inexperienced personnel.

g) How should a Government buyer prepare for bargaining with a sole source, "Take It or Leave It" offeror? Based on the elements of bargaining and the strategy and tactics shown to have statistical significance, gathering and assimilating information should be a Government buyer's first priority. This includes "Knowing what you are buying," and "Your understanding of the Government's interests". Also important to bargaining within this type of scenario are actions that would bolster the Government's "Commitment to ensuring a fair and reasonable price," and actions that would extend the amount of "Time available" for the procurement.

#### **E. SUGGESTIONS FOR FUTURE RESEARCH**

1. This research was tailored to one specific procurement case, the case of a Government-contractor bilateral monopoly. A number of bargaining elements were found to be significant in this case including, knowledge or information, commitment, time, interests and alternatives.

A follow-on study to this research which focused on the role of one or more of these bargaining elements in other bargaining or negotiation scenarios, such as negotiations

for the acquisition of a major weapon system, might yield significant results. Depending on the procurement or acquisition scenario proposed, other elements of bargaining might prove to be significant, or perhaps an entirely different set of bargaining elements might prove to be significant. Such knowledge would be of assistance to Government contracting personnel preparing for the type of bargaining or negotiation scenario studied.

2. The data within this thesis were collected through the distribution of a survey. Siegel and Fouraker's research is the only work found by the researcher which used findings from empirical experimentation as a basis for research. The procedures and scenarios used to conduct this empirical work were detailed in *Bargaining and Group Decision Making, Experiments in Bilateral Monopoly*. The elements of bargaining determined to be significant within this thesis could be examined empirically using Siegel and Fouraker's work as a basis and Government contracting personnel as the subjects. A follow-on study using their scenarios and Government contracting personnel as participants might uncover additional conclusions which might benefit the research within the contracting field and the training of Government contracting personnel.

APPENDIX: THESIS SURVEY (WITH COVER LETTER)

Naval Postgraduate School

SGC 2398

Monterey, CA 93943

6 August, 1997

Dear Reader,

The purpose of this survey is to identify effective bargaining approaches which might be used to procure goods or services from a sole source of supply when the sole source refuses to bargain and the price is suspected to be unfair or unreasonable. Initially, a sole source offeror has considerable bargaining leverage over the Government. Other factors may give a sole source even more bargaining leverage. Pricing data needed to properly evaluate the seller's quote may be incomplete, inaccurate or unavailable. Urgent and compelling need may require accelerating the procurement process. This survey has been designed to gather and evaluate possible approaches a Government buyer might use to effectively work through this type of difficult procurement situation.

The information gathered from this survey will be analyzed for information that Navy procurement personnel may find helpful when dealing with a difficult sole source

procurement. The goal is to increase the effectiveness of Government procurement by proposing methods and strategies which might be used by Government buyers to achieve a better bargain from a sole source seller, and to ensure that the price proposed by the sole source is fair and reasonable.

The survey is divided into five parts. Part I of the survey requests various demographic information. Part II presents a fictional procurement scenario which is used as a basis for answering the survey questions in Part III. Part IV of the survey provides a space for the reader to provide additional bargaining strategy and approaches, commentary and feedback. Part V presents different bargaining approaches for the reader to evaluate.

Thank you for giving your valuable time to this survey effort. Your knowledge, experience and acumen will be used to form the nucleus for guidelines that all Government contracting personnel may use to accomplish their work more efficiently and make their jobs easier. When you have completed the survey, please return it to your supervisor for mailing.

Sincerely,

Dennis G. Van Veen  
LT SC USN



SURVEY PART I - DEMOGRAPHIC INFORMATION

(Please circle or fill in the appropriate response.)

1. Name (optional): \_\_\_\_\_
2. Age:   20-25      26-30      31-35      36-40      41-45      46-50  
               55-60      61+
3. Gender:                  female                  male
4. Military rank or civilian pay grade: \_\_\_\_\_
5. Job title: \_\_\_\_\_
6. Command (optional): \_\_\_\_\_
7. E-mail address (optional): \_\_\_\_\_
8. Years experience in Government contracting:  
  
    0-1          2-3          4-5          6-10          11-15          16-20  
  
    21-25          26+
9. Highest level of education attained:  
  
    a. Some High School                                  e. Bachelor's Degree  
  
    b. High School Diploma                              f. Some Graduate Level  
       (or GED)    Courses  
  
    c. Some College    g. Master's Degree  
  
    d. Associate's Degree                                  h. Doctorate Degree
10. Years experience you have had in each of the following procurement categories. (Use fractions for partial years)  
  
\_\_\_\_ a. Under \$2,500                                  \_\_\_\_ d. \$100,001-\$5,000,000  
\_\_\_\_ b. \$2,501 - \$25,000                              \_\_\_\_ e.\$5,000,001-\$10,000,000  
\_\_\_\_ c. \$25,001 - \$100,000                              \_\_\_\_ f. Over \$10,000,000

Thank you! You have completed Part I. Please go to Part II

PART II  
PROCUREMENT SCENARIO

You are a buyer for the Navy working at the Naval Inventory Control Point (NAVICP), Philadelphia. In front of you is a purchase request from USS CONSTELLATION (CV 64) for two high pressure steam reducing valves, parts which are essential for the operation of two of the ship's four steam-powered catapults. The catapults are currently out of commission due to lack of these two parts. The purchase request is stamped C-3 CASREP, meaning that a major degradation has occurred to a primary weapon system on board a critical element of the Nation's defense. In fact, the C-3 status of your requisition is automatic justification at NAVICP for you to deviate from the normal requirements of the Federal Acquisition Regulation (FAR), based on the "urgent and compelling" nature of the requirement. You received the requisition yesterday and immediately called the source of supply, San Diego Valve and Industrial (SDVI), which quickly responded with an offer of \$90,000 for the two valves required.

The technical report was just placed in your in-box. The report says that the valves were manufactured according to a design tailored to fit the unique pressure reducing requirements of the steam catapults and that the original

manufacturer went out of business 20 years ago. Eight of the valves were originally procured by the Navy, four for CONSTELLATION and four spares for supply system stock. Supply stocks were exhausted 10 years ago when all four valves were requisitioned for a major overhaul of the catapults. The valve has not been purchased by the Government since the original valves were purchased thirty years ago. Purchase price for the original valves was \$1,500 each. The technical report stated that SDVI is the only known source of the valves. The report also concluded, based on an analysis of the NAVSHIPS drawings for the valve, that manufacturing the valve, if a manufacturer could be found, would take a minimum of 16 weeks.

With some suspicion concerning the reasonableness of the offered price, you called SDVI and requested cost or pricing data that would allow you to justify the price. SDVI refused to forward any cost or pricing data, telling you that it is against their company policy to provide such data. SDVI also reminded you that their price was below \$100,000, which is the Simplified Acquisition Threshold at NAVICP. Finally, SDVI told you that their price is "nonnegotiable." In short, you were told to "Take it, or leave it." CONSTELLATION is scheduled to depart on a six

month deployment in three days. You have been told in no uncertain terms that the ship must have these valves before getting underway. The Commander of NAVICP, Admiral Flag, will be briefed daily on the progress of this procurement.

Though the above scenario may seem highly unlikely, the same or very similar situations do occur at the NAVICP and the numerous field contracting offices which support the U.S. Navy. The situation is this: There is only one known supplier. Cost or pricing data cannot be obtained or is inaccurate or incomplete. The part is urgently needed. The supplier refuses to negotiate. What approaches should you, as a Government buyer, use to ensure the Government receives a fair and reasonable price?

Using the information contained in this scenario, please answer the survey questions in Part III.

**PART III**  
**SURVEY QUESTIONS**

Please answer the following questions based on the USS  
CONSTELLATION procurement scenario.

(circle your answer please)

1. Have you ever had to buy goods and services under  
conditions similar to the USS CONSTELLATION procurement  
scenario?

- |                               |   |
|-------------------------------|---|
| a. Yes, once.                 | d. Yes, several times.                      |
| b. No, never.                 | e. Yes, at least one<br>occasion per month. |
| c. Yes, a couple<br>of times. | f. Other. _____                             |

2. Rank the following elements according to their  
importance to resolving the bargaining impasse with San  
Diego Valve and Industrial (SDVI). (Rank your top ten  
choices. Rank your most important element with a "1" and  
your least important element with a "10".)

- |       |   |
|-------|---|
| _____ | a. The seller's opinion of your credibility.                                    |
| _____ | b. The relationship between you and the seller<br>from prior business dealings. |
| _____ | c. Your effectiveness as a communicator.  |
| _____ | d. Possible alternatives to buying from the<br>seller.                          |
| _____ | e. Your understanding of the Government's                                       |

interests.

- \_\_\_\_\_ f. Your understanding of the seller's interests.
  - \_\_\_\_\_ g. Successfully building a working relationship between you and the seller.
  - \_\_\_\_\_ h. Finding a middle ground or compromise between you and the seller which provides for a mutual gain.
  - \_\_\_\_\_ i. Convincing the seller to bargain objectively.
  - \_\_\_\_\_ j. Successfully arguing that the seller's price is unreasonable.
  - \_\_\_\_\_ k. Knowing what you are buying.
  - \_\_\_\_\_ l. Your commitment to ensuring the Government receives a fair and reasonable price.
  - \_\_\_\_\_ m. The amount of time available to you to resolve the problem.
  - \_\_\_\_\_ n. The amount of effort you exert to resolve the problem.
  - \_\_\_\_\_ o. Other (Please explain)
- 
- 
- 

3. In your own experience have you found that:

a. A "Take it or Leave It" offer from a sole source of supply is always the final word.

b. A "Take it or Leave It" offer from a sole source of supply is almost always the final word.

c. A "Take it or Leave It" offer from a sole source of supply is the final word over one half of the time.

4. In your own experience have you found that:

a. A "Take it or Leave It" offer from a sole source of supply can occasionally be negotiated.

b. A "Take it or Leave It" offer from a sole source of supply can usually be negotiated.

c. A "Take it or Leave It" offer from a sole source of supply can almost always be negotiated.

5. Which strategies or approaches have you used in the past, or would attempt to use in the future to resolve the bargaining impasse with San Diego Valve and Industrial (SDVI), assuming that it was not possible to find another source of supply? (Please rank your top ten choices in each category.)

	Have used <u>in the past</u>	Would use in the <u>future</u>
a. Appeal to seller's patriotism.	_____	_____
b. Implicitly notify the seller that future Government business for his	_____	_____



firm may be sharply curtailed unless  
he bargains in good faith.

- c. Tell the seller in no uncertain \_\_\_\_\_  
terms that future Government business  
for his firm may be sharply curtailed  
unless he bargains in good faith.
- d. Tell the seller that you need his \_\_\_\_\_  
help in order to determine that  
the offered price is fair and reasonable.
- e. Threaten to bypass the seller's \_\_\_\_\_  
representative you are dealing with  
and appeal for a fair and reasonable  
price from his boss.
- f. Use probing questions (e.g., How \_\_\_\_\_  
did the seller arrive at the price  
he is asking for the part.) in order  
to test the firmness of the seller's  
position.
- g. Inform the seller of possible \_\_\_\_\_  
alternatives to buying the part from  
the seller (e.g., possibly repairing  
the valve).
- h. Lie to the seller by informing him \_\_\_\_\_  
that you have another source of

supply.

- i. Tell the seller that you plan to \_\_\_\_\_  
bring in higher management to  
assist you.
- j. Make a low ball counter-offer. \_\_\_\_\_
- k. Make a counter-offer explaining \_\_\_\_\_  
the amount offered is all you have.
- l. Explain that the seller's price is \_\_\_\_\_  
much higher than what you expect  
the part should cost and ask for a  
cost breakdown.
- m. "Walk away" from the seller's offer, \_\_\_\_\_  
with the hope that you can resume  
bargaining on better terms later on.
- n. Offer the sole source a letter \_\_\_\_\_  
contract.
- o. Tell the seller, "You have got \_\_\_\_\_  
to do better than that!"
- p. Tell the seller that a new design \_\_\_\_\_  
for the part you wish to buy from  
him is "In the works."
- q. Tell the seller that his position \_\_\_\_\_  
has angered your boss.
- r. Patiently wait for the seller to \_\_\_\_\_

offer a better deal.

s. Other bargaining approaches you \_\_\_\_\_  
would use or have used in the past  
(Please describe, and use the reverse  
side of this page if extra space is needed.)

---

---

---

---

**PART IV**  
**ADDITIONAL INFORMATION**

1. Please use the space provided below to provide additional information with respect to how you would resolve the bargaining impasse with San Diego Valve and Industrial. (Use the back side of this page if you need additional space.)

---

---

---

---

---

---

---

---

---

---

2. It may be beneficial to call you at some time in the future to discuss your responses to this survey. May we call you?

a. Yes. You may call me at telephone number \_\_\_\_\_ .

b. Please don't call me.

c. I prefer e-mail. My e-mail address is \_\_\_\_\_ .

3. Please use the space below to ask questions or provide comments related to the survey. All questions will be answered expeditiously. Any added comments (including

criticism) are appreciated.

---

---

---

---

---

---

---

---

Thank You. Please proceed to Part V.

## PART V - BARGAINING PREFERENCES

1. For each set of bargaining approaches listed below, place a "1" next to your most preferred response, a "2" next to your second preferred response and a "3" next to your least preferred response:

- a. ☐ Participate ☐ Participate as ☐ Participate as  
friends adversaries problem-solvers
- b. ☐ The goal is ☐ The goal is ☐ The goal is a  
agreement victory wise outcome  
reached  
efficiently and  
amicably
- c. ☐ Separate ☐ Make concessions ☐ Demand  
the people to cultivate the concessions as a  
from the relationship condition of the  
problem relationship
- d. ☐ Be hard on ☐ Be soft on the ☐ Be soft on the  
the people people and soft people and hard  
and hard on the problem on the problem  
problem
- e. ☐ Trust others ☐ Distrust others ☐ Proceed  
independent  
of trust
- f. ☐ Dig in to ☐ Focus on ☐ Change your

- your interests, position easily  
position not positions
- g. ☐ Explore ☐ Make offers ☐ Make threats  
Interests
- h. ☐ Mislead as ☐ Disclose your ☐ Avoid having a  
to your bottom line bottom line  
bottom line
- i. ☐ Invent ☐ Demand one- ☐ Accept one-sided  
options for sided gains as losses to reach  
mutual gain the price of agreement  
agreement
- j. ☐ Search for ☐ Search for the ☐ Develop multiple  
the single single answer: options to choose  
answer: the the one you will from and decide  
one they will accept later  
accept
- k. ☐ Insist on ☐ Insist on ☐ Insist on using  
your position agreement objective  
criteria
- l. ☐ Try to win ☐ Try to avoid ☐ Try to reach a  
a contest of a contest of will result based on  
will standards  
independent of  
will



m. ☐ Yield to ☐ Apply pressure ☐ Reason and be  
pressure open to reasons;  
Yield to  
principle, not  
pressure.

Thank You! You have now completed this survey. Please  
return the survey to your supervisor.



## LIST OF REFERENCES

1. *Contract Pricing Reference Guide (CPRG), Volume I, Price Analysis*, Wright-Patterson AFB, OH, Air Force Institute of Technology, and Washington, DC, Federal Acquisition Institute, January 1997.
2. *Federal Acquisition Regulation (FAR)*, Washington, DC, Government Printing Office, 1997.
3. Gould, John P. Jr., and Lazear, Edward P., *Microeconomic Theory*, Homewood IL, Irwin, 1989.
4. Higgs, Jocelyn R., *An Examination of Acquisition Ethical Dilemmas: Case Studies for Ethics Training*, Master's Thesis, Monterey, CA, Naval Postgraduate School, December 1995.
5. Bacharach, Samuel B., and Lawler, Edward J., *Bargaining Power, Tactics and Outcomes*, San Francisco, Jossey-Bass Publishers, 1981.
6. Hirschleifer, Jack, *Price Theory and Applications*, Englewood Cliffs, NJ, Prentice Hall, 1988.
7. Friedman, David, *Price Theory: An Intermediate Text, Chapter 11: Game Theory, Strategic Behavior and Oligopoly*, South-Western Publishing Co., 1990 at Internet site [www.best.com/~ddfr/Academic/Price\\_Theory/PThy\\_Chapter\\_11/PThy\\_Chapter\\_11.html](http://www.best.com/~ddfr/Academic/Price_Theory/PThy_Chapter_11/PThy_Chapter_11.html)
8. Varian, Hal. R., *Microeconomic Analysis*, New York, W. W. Norton & Company, Inc., 1978.
9. Karrass, Chester L., *Give and Take, The Complete Guide to Negotiating Strategies and Tactics*, New York, Thomas Y. Crowell Company, 1974.
10. Roget, Peter Mark, *Roget's Thesaurus*, at Internet cite [www.bsee.swin.edu.au/text/roget/home.html](http://www.bsee.swin.edu.au/text/roget/home.html)
11. *Contract Pricing Reference Guide (CPRG), Volume V, Federal Contract Negotiation Techniques*, Wright-Patterson AFB, OH, Air Force Institute of Technology, and Washington, DC, Federal Acquisition Institute, October, 1996.

12. Machlup, Fritz, and Taber, Martha, *Bilateral Monopoly, Successive Monopoly, and Vertical Integration*, London, Economica, The London School of Economics and Political Science, Volume 27, May 1960, pp. 101-117.
13. Rubin, Jeffrey Z., and Brown, Bert R., *The Social Psychology of Bargaining and Negotiation*, New York, Academic Press, 1975.
14. Zeuthen, Frederik, *Problems of Monopoly and Economic Warfare*, New York, Reprints of Economic Classics, Augustus M. Kelley Publishers, 1968.
15. Pen, J., *A General Theory of Bargaining*, Evanston, IL, The American Economic Review, The American Economic Association, Volume 42, 1952, pp. 24-42.
16. Nash, John F. Jr., *The Bargaining Problem*, *Econometrica*, Volume 18, Chicago, IL, The University of Chicago, 1950, p. 155-162.
17. Friedman, *Bilateral Monopoly: A Solution*, at Internet site [www.best.com/~ ddfr/Academic/Bilateral\\_Monopoly\\_Ä/Bilateral\\_Monopoly.html](http://www.best.com/~ddfr/Academic/Bilateral_Monopoly_Ä/Bilateral_Monopoly.html)
18. Blair, Roger D., David L. Kaserman and Richard E. Romano, *A Pedagogical Treatment of Bilateral Monopoly*, *Southern Economic Journal*, Volume 55, 1989, pp. 831-841.
19. Siegel, Sidney, and Lawrence E. Fouraker, *Bargaining and Group Decision Making*, New York, McGraw-Hill, 1960.
20. Cross, John G., *The Economics of Bargaining*, London, Basic Books, Inc., 1969.
21. Truett, Dale and Truett, Lila, *Joint Profit Maximization, Negotiation and Determinacy of Price*, *The Journal of Economic Education*, Volume 24, Summer 1993, pp. 260-270.
22. Dobbs, Ian M. And Hill, Martyn B., *Pricing Solutions to the Bilateral Monopoly Problem under Uncertainty*, Chapel Hill, North Carolina, *Southern Economic Journal*, Volume 60, October, 1993, pp. 479-489.
23. Lamm, David V., and Vose, Lawrence C., *Seller Pricing Strategies: A Buyer's Perspective*, *Journal of Purchasing and Materials Management*, National Association of Purchasing

Management, Inc. Fall, 1988, pp. 9-13.

24. Catlin, Robert M., and Bernard J. Faenza, *Identification of Negotiation Tactics of Air Force Contract Negotiators*, Wright-Patterson Air Force Base, OH, School of Systems and Logistics, Air Force Institute of Technology, September, 1985, as quoted in Besch, Thomas M., *Identification of Negotiation Tactics and Strategies of Army Negotiators*, Masters Thesis, Monterey, CA, Naval Postgraduate School, December, 1992.

25. Stanley, Mark E., *Experienced Versus Inexperienced Negotiators*, Masters Thesis, Monterey, CA, Naval Postgraduate School, June, 1995.

26. Warschaw, Tessa Albert, *Winning By Negotiation*, New York, McGraw-Hill, 1980.

27. Besch, Thomas M., *Identification of Negotiation Tactics and Strategies of Army Negotiators*, Masters Thesis, Monterey, CA, Naval Postgraduate School, December, 1992.

28. Johnston, Robert W., *Negotiation Strategies: Different Strokes for Different Folks*, in Lewicki, Roy J., and Litterer, Joseph A., *Negotiation: Readings, Exercises, and Cases*, Homewood, Illinois, Irwin, 1985.

29. Sun Tzu, *The Art of War*, translated by Samuel B. Griffith, London, Oxford University Press, 1963.

30. Fisher, Roger, Kopelman, Elizabeth and Schneider, Andrea Kupfer, *Beyond Machiavelli, Tools for Coping with Conflict*, Cambridge, MA, Harvard University Press, 1994.

31. Fisher, Roger, and Ury, William, *Getting to Yes Negotiating Agreement Without Giving In*, Boston, Houghton Mifflin Company, 1981.



## BIBLIOGRAPHY

Acuff, Frank L., *How to Negotiate Anything with Anyone Anywhere Around the World*, New York, American Management Association, 1993.

Albin, Cecilia, *The Role of Fairness in Negotiation*, *Negotiation Journal*, Volume 9, No. 3, July, 1993.

Albrecht, Karl and Albrecht, Steve, *Added Value Negotiating, The Breakthrough Method for Building Balanced Deals*, Homewood, Illinois, Business One Irwin, 1993.

Bacharach, Samuel B., and Lawler, Edward J., *Bargaining: Power, Tactics and Outcomes*, San Francisco, Jossey-Bass Publishers, 1981.

Besch, Thomas M., *Identification of Negotiation Tactics and Strategies of Army Negotiators*, Masters Thesis, Monterey, CA, Naval Postgraduate School, December, 1992.

Bishop, Robert L., *A Zeuthen-Hicks Theory of Bargaining*, New Haven, CT, *Econometrica*, Volume 32, No.3, July, 1964.

Blair, R. D., D. L. Kaserman, R. E. Romano, *A Pedagogical Treatment of Bilateral Monopoly*, *Southern economic Journal*, Volume 55, 1989, pp. 831-840.

Bowley, Arthur Lyon, *The Mathematical Groundwork of Economics*, New York, Reprints of Economic Classics, Augustus M. Kelley Publishers, 1960.

Brodt, Susan E., and Duncan, George T., *Role-Differentiation Strategies for Negotiating Teams: Analysis of "Good Cop/Bad Cop" Tactics*, Pittsburgh, PA, Carnegie Mellon University, 10 August 1994.

Brooks, Earl and Odiorne, George S., *Managing by Negotiations*, Malabar, Florida, Krieger Publishing Company, 1984.

Catlin, Robert M., and Bernard J. Faenza, *Identification of Negotiation Tactics of Air Force Contract Negotiators*, Wright-Patterson Air Force Base, OH, School of Systems and Logistics, Air Force Institute of Technology, September, 1985.



Cohen, Herbert, *You Can Negotiate Anything*, New York, Lyle Stuart, 1981.

*Contract Pricing Reference Guide (CPRG), Volume I, Price Analysis*, Wright-Patterson AFB, OH, Air Force Institute of Technology, and Washington, DC, Federal Acquisition Institute, January 1997.

*Contract Pricing Reference Guide (CPRG), Volume V, Federal Contract Negotiation Techniques*, Wright-Patterson AFB, OH, Air Force Institute of Technology, and Washington, DC, Federal Acquisition Institute, October, 1996.

Cournot, Augustin, *Researches Into the Mathematical Principles of the Theory of Wealth*, New York, Reprints of Economic Classics, Augustus M. Kelley Publishers, 1960.

Cross, John G., *The Economics of Bargaining*, London, Basic Books, Inc., 1969.

Dixit, Avinash K. and Nalebuff, Barry J., *Thinking Strategically, The Competitive Edge in Business, Politics, and Everyday Life*, New York, W. W. Norton & Company, 1991.

Dobbs, Ian M. And Hill, Martyn B., *Pricing Solutions to the Bilateral Monopoly Problem under Uncertainty*, Chapel Hill, North Carolina, Southern Economic Journal, Volume 60, October, 1993, pp. 479-489.

Druckman, Daniel, Zechmeister, Kathleen and Solomon, Daniel, *Determinants of Bargaining Behavior in a Bilateral Monopoly Situation: Opponent's Concession Rate and Relative Defensibility*, Behavioral Sciences, Volume 17, 1972, pp. 514-531.

Druckman, Daniel and Bonoma, Thomas V., *Determinants of Bargaining Behavior in a Bilateral Monopoly Situation II: Opponent's Concession Rate and Similarity*, Behavioral Science, Volume 21, No. 4, July, 1976.

*Federal Acquisition Regulation (FAR)*, Washington, DC, Government Printing Office, 1997.

Fisher, Roger, and Ury, William, *Getting to Yes: Negotiating Agreement Without Giving In*, Boston, Houghton Mifflin Co., 1981.

Fisher, Roger, Kopelman, Elizabeth and Schneider, Andrea Kupfer, *Beyond Machiavelli: Tools for Coping with Conflict*, Cambridge, Massachusetts, Harvard University Press, 1994.

Fitzsimmons, James Patrick, *Negotiations: Experienced vs. Inexperienced Negotiators*, Master's Thesis, Naval Postgraduate School, Monterey, California, December 1990.

Friedman, *Bilateral Monopoly: A Solution*, at Internet site [www.best.com/~ ddfr/Academic/Bilateral\\_Monopoly\\_Ä/Bilateral\\_Monopoly.html](http://www.best.com/~ddfr/Academic/Bilateral_Monopoly_Ä/Bilateral_Monopoly.html)

Friedman, David, *Price Theory: An Intermediate Text, Chapter 11: Game Theory, Strategic Behavior and Oligopoly*, South-Western Publishing Co., 1990 at Internet site [www.best.com/ddfr/Academic /Thy\\_Chapter\\_11.html](http://www.best.com/ddfr/Academic /Thy_Chapter_11.html)

Gould, John P. Jr., and Lazear, Edward P., *Microeconomic Theory*, Homewood IL, Irwin, 1989.

Hayward, John Alan, *Learning Styles of Government and Industry Negotiators: An Analysis*, Masters Thesis, Naval Postgraduate School, Monterey, California, June 1994.

Hicks, John Richard, *The Theory of Wages*, London, Macmillan & Co. Ltd., 1963.

Higgs, Jocelyn R., *An Examination of Acquisition Ethical Dilemmas: Case Studies for Ethics Training*, Master's Thesis, Monterey, CA, Naval Postgraduate School, December 1995.

Hirschleifer, Jack, *Price Theory and Applications*, Englewood Cliffs, NJ, Prentice Hall, 1988.

Hopmann, Terrence P., *The Negotiation Process and the Resolution of International Conflicts*, Columbia, South Carolina, University of South Carolina Press, 1996.

Horn, Henrick, and Wolisky, Asher, *Bilateral Monopolies and Incentives for Merger*, Rand Journal of Economics, Volume 19, No. 3, Autumn, 1988.

Ilich, John, *The Art and Skill of Successful Negotiation*, Englewood Cliffs, New Jersey, Prentice Hall, Inc., 1973.

Johnston, J., *A Model of Wage Determination Under Bilateral*

*Monopoly*, London, The Economic Journal, Royal Economic Society, Macmillan Journals Limited, September, 1992.

Johnston, Robert W., *Negotiation Strategies: Different Strokes for Different Folks*, in Lewicki, Roy J., and Litterer, Joseph A., *Negotiation: Readings, Exercises, and Cases*, Homewood, Illinois, Irwin, 1985.

Karrass, Chester L., *A Study of the Relationship of Negotiator Skill and Power as Determinants of Negotiation Outcome*, Doctoral thesis, University of Southern California, Los Angeles, California, 1968.

Karrass, Chester L., *The Negotiating Game*, New York: The World Publishing Company, 1970.

Karrass, Chester L., *Effective Negotiating: Poker tables Ethics*, Traffic Management, August 1985, p.85.

Karrass, Chester L., *The Fine Art of Answering Questions*, Traffic Management, June 1988, p.41.

Karrass, Chester L., *How to Handle the Threat*, Traffic Management, April, p. 35.

Karrass, Chester L., *Down and Dirty Tactics*, Traffic Management, June 1992, p. 25-26

Karrass, Chester L., *Give and Take: The Complete Guide to Negotiating Strategies and Tactics*, New York, Thomas Y. Crowell Company, 1974.

Lamm, David V., and Vose, Lawrence C., *Seller Pricing Strategies: A Buyer's Perspective*, Journal of Purchasing and Materials Management, National Association of Purchasing Management, Inc. Fall, 1988.

Lewicki, Roy J., and Litterer, Joseph A, *Negotiation: Readings, Exercises and Cases*, Irwin, Homewood, Illinois, 1985.

Machlup, Fritz, and Taber, Martha, *Bilateral Monopoly, Successive Monopoly, and Vertical Integration*, London, Economica, The London School of Economics and Political Science, Volume 27, May 1960, pp. 101-117.

Merrifield, John, *Coasian Resolutions of Two-Party*

*Externalities: A Special Case of Bilateral Monopoly*, Public Finance, Volume 48, No. 1, 1993.

Nash, John F. Jr., *The Bargaining Problem*, *Econometrica*, Volume 18, Chicago, IL, The University of Chicago, 1950, p. 155-162.

Nierenberg, Gerard I., *The Art of Negotiating*, New York: Simon and Schuster, 1968.

Nierenberg, Gerard I., *The Complete Negotiator*, New York: Nierenberg & Zeif Publishing, 1986.

Nierenberg, Gerard I., *Fundamentals of Negotiating*, New York, Hawthorn Books, 1973.

Neale, Margaret A., and Bazerman, Max H., *Cognition and Rationality in Negotiation*, New York, The Free Press, 1991.

Pen, J., *A General Theory of Bargaining*, Evanston, IL, The American Economic Review, The American Economic Association, Volume 42, 1952, pp. 24-42.

Ponssard, Jean-Pierre, *Competitive Strategies*, Amsterdam, North-Holland Publishing Company, 1981.

Raiffa, Howard, *The Art and Science of Negotiation*, Cambridge Massachusetts, Harvard University Press, 1982.

Roget, Peter Mark, *Roget's Thesaurus*, at Internet cite [www.bsee.swin.edu.au/text/roget/home.html](http://www.bsee.swin.edu.au/text/roget/home.html)

Rubin, Jeffrey Z., and Brown, Bert R., *The Social Psychology of Bargaining and Negotiation*, New York, Academic Press, 1975.

Schelling, Thomas C., *The Strategy of Conflict*, Cambridge, Massachusetts, Harvard University Press, 1963.

Siegel, Sidney, and Lawrence E. Fouraker, *Bargaining and Group Decision Making*, New York, McGraw-Hill, 1960.

Siegel, Sidney, and Lawrence E. Fouraker, *Bargaining Behavior*, New York, McGraw-Hill, 1963.

Stahl, Ingolf, *Bargaining Theory*, Stockholm, The Economic Research Institute at the Stockholm School of Economics, 1972.

Stanley, Mark E., *Experienced versus Inexperienced Negotiators*, Masters Thesis, Naval Postgraduate School, Monterey, CA, June 1995.

Sun Tzu, *The Art of War*, translated by Samuel B. Griffith, London, Oxford University Press, 1963.

Truett, Dale and Truett, Lila, *Joint Profit Maximization, Negotiation and Determinacy of Price*, *The Journal of Economic Education*, Volume 24, Summer 1993, pp. 260-270.

Varian, Hal R., *Microeconomic Analysis*, New York, W. W. Norton & Company, 1978.

Warshaw, Tessa Albert, *Winning by Negotiation*, New York, McGraw-Hill, 1980.

Zeuthen, Frederik, *Problems of Monopoly and Economic Warfare*, New York, Reprints of Economic Classics, Augustus M. Kelley Publishers, 1968.

## INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center.....2  
8725 John J. Kingman Rd., Ste 0944  
Ft. Belvoir, Virginia 22060-6218
2. Dudley Knox Library.....2  
Naval Postgraduate School  
411 Dyer Rd.  
Monterey, California 93943-5101
3. Defense Logistic Studies Information Exchange.....1  
U.S. Army Logistics Management College  
Fort Lee, Virginia 23801-6043
4. Dr. David V. Lamm.....2  
Code SM/Lt  
Naval Postgraduate School  
Monterey, California 93943-5103
5. LT Dennis Van Veen.....2  
1132 Spruance Road  
Monterey, California 93940
6. Mr. William A. Van Veen.....1  
2514 Traynor Avenue  
Claymont, Delaware 19703
7. Supply Officer.....1  
Marine Corps Base HI  
Box 63063  
MCBH Kaneohe Bay, Hawaii 96863-3063





DUDLEY KNOX LIBRARY  
NAVAL POSTGRADUATE SCHOOL  
MONTEREY CA 93943-5101

66 553NPS 3795  
TH  
11/99 22527-106 14811









DUDLEY KNOX LIBRARY



3 2768 00366404 6